ALPINE®

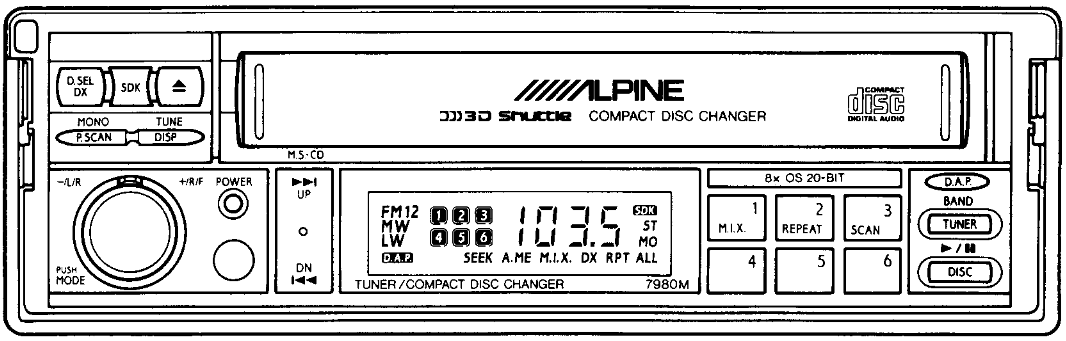
SERVICE MANUAL

FM/MW/LW/SDK In-Dash CD Changer

3D Shuttle

COMPACT disc DIGITAL AUDIO

- This model is component system unit of compact disc changer and tuner unit.
- For the CD deck mechanism parts (DS24A010) of this model, refer to the Service Manual • DS Series (68P50238W01).


D.SEL DX
SDK
MONO
TUNE
P.SCAN
DISP
M.S-CD
ALPINE
3D Shuttle COMPACT DISC CHANGER
COMPACT disc DIGITAL AUDIO
-/L/R
+/R/F
POWER
PUSH MODE
UP
DN
FM12
MW
LW
D.A.P.
1035
SDK
ST
MO
SEEK A.ME M.I.X. DX RPT ALL
TUNER/COMPACT DISC CHANGER 7980M
8x OS 20-BIT
1 M.I.X.
2 REPEAT
3 SCAN
4
5
6
D.A.P.
BAND
TUNER
▶/II
DISC

7980M

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Spare Schematic Diagram Inserted.

Specifications

<CD SECTION>

System	Optical (Compact Disc system)
Quantizing Bit Number	20 bit Liner system
Channels	2Channels
Channel Balance (1kHz)	0 ± 3dB
Distortion (1kHz)	0.05%
Frequency Response (Ref. 1kHz)	17Hz : 0 ± 3dB 127Hz : 0 ± 2dB 10.007kHz : 0 ± 2dB 19.997kHz : 0 ± 4dB
S/N Ratio (1kHz)	85dB
Separation (1kHz)	70dB
Noise Level (at Volume Min.)	0.1mV
Currents (at PLAY)	1.2A
De-Emphasis (Ref. 1kHz)	4kHz : -20 ± 3dB 16kHz : -20 ± 3dB

<FM SECTION>

Intermediate Frequency	10.7 ± 0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono, 98.1MHz, 30dB S/N)	17.2dBf
-10dB Limiting Sensitivity (Mono, 98.1MHz)	17.2 ± 5dBf
S/N Ratio (Stereo, 98.1MHz)	48dB
Image Rejection (106.1MHz)	40dB
IF Rejection (90.1MHz)	60dB
Distortion (Input 1mV, 98.1MHz)	1%
Frequency Response (98.1MHz, Ref. 400Hz)	100Hz : 0 ± 3dB 10kHz : -12 ± 3dB
Stereo Separation (1kHz)	25dB

<MW SECTION>

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Sensitivity (20dB S/N, 999kHz)	34dB
S/N Ratio (999kHz)	44dB
Image Rejection (1,404kHz)	50dB
IF Rejection (603kHz)	60dB
Distortion (999kHz)	2%
SK Sensitivity (at 98.MHz)	14dB
Frequency Response(999kHz, Ref. 400Hz)	100Hz : -3 ± 4dB 4kHz : -12 ± 6dB

<LW SECTION>

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Sensitivity (20dB S/N, 216kHz)	41dB
S/N Ratio (216kHz)	40dB
Image Rejection (216kHz)	50dB
IF Rejection (216kHz)	50dB

Distortion	2%
Frequency Response (216kHz, Ref 400kHz)	100Hz : -3 ± 4dB 4kHz : -12 ± 6dB

<GENERAL>

Power Supply	DC 14V
Pre-Output / Impedance	1.6V / 10kohm
Semiconductors	Changer Unit : 26 IC's, 39 Transistors, 15 Diodes, 11 Zener Diodes Tuner Unit : 19 IC's, 50 Transistors, 24 Diodes, 6 Zener Diodes (○) 19 IC's, 53 Transistors, 24 Diodes, 6 Zener Diodes (●)
Dimensions (W x H x D)	Changer Unit : 178 x 50 x 153mm Tuner Unit : 178 x 25 x 150mm
Weight	Changer Unit : 2.2Kg Tuner Unit : 0.7Kg

Notes : Due to continuing product improvement, specifications and designs are subject to change without notice.
○ : For except Germany Model only.
● : For Germany Model only. Others : Common.

ERROR INDICATION

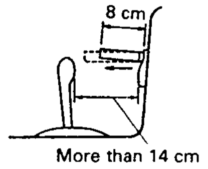
Error Display	Cause	Measures
E-01	Magazine cannot be ejected. Disc is not drawn out or set back into the magazine tray. Disc change operation does not function.	Press the eject button and set to the play mode. If the play mode can not be set, press the eject button again. Once the magazine is ejected, reinsert it then set the play mode. If the magazine can not be ejected, contact a service shop.
E-02	Disc is drawn out of the magazine tray but is not set back into it.	Press the eject button to eject the magazine. Now insert an empty magazine and recover the disc. If this does not work, contact a service shop.
	Magazine does not move forward or backward.	Press the eject button to eject the magazine. If there is a disc inside the changer, insert an empty magazine and recover it. If this does not work, contact a service shop.
EEEE	No transfer of signals between changer and audio box.	Wait for several seconds. If no signals are transferred, turn the ACC power off then back on. If the problem persists, disconnect the battery power lead and ACC power lead, then reconnect them. If the problem still persists, check the connection of the DIN cable. If the problem still can not be solved, contact a service shop.
---H	Excessively high temperature detected in car.	The error display turns off once the temperature returns to normal.

PRECAUTIONS

Do not attempt to repair or service the unit yourself; return the unit to your nearest authorized Alpine Service Station for servicing.

Cautions before installation

The magazine is pushed out forward (approximately 8cm from the panel) when discs are changed or magazine is ejected. To take out the magazine, a free space of more than 14 cm is required from the front panel. Select a place for installation where the magazine is ejected. Select a place for installation where the magazine will not hamper stick shift operation.



Temperature in the vehicle

When your car is parked for a long period of time during the summer or winter, the temperature inside the car fluctuates greatly. The temperature inside the vehicle should be between +60°C and −10°C (+140°F and +14°F) when operating the unit.

Cautions during Playback

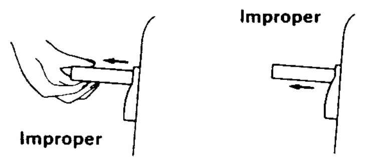
Playing a disc while driving on a very bumpy road may result in skips but this will not scratch the disc or damage the player.

The noise level on compact discs is much lower than on analog-type records or tapes. Therefore, before playing a disc, turn the volume control fully counterclockwise, then adjust volume by gradually turning the control clockwise once playback begins.

Do not turn clockwise too abruptly as this could damage the speakers.

Handling Magazine

The magazine is automatically pushed out forward when a disc is changed. When this is done, do not press on the magazine strongly with your hand or subject it to strong shocks, as this will result in damage. Also, operate in such a way as to not hamper driving, as you may knock on the magazine when shifting gears.



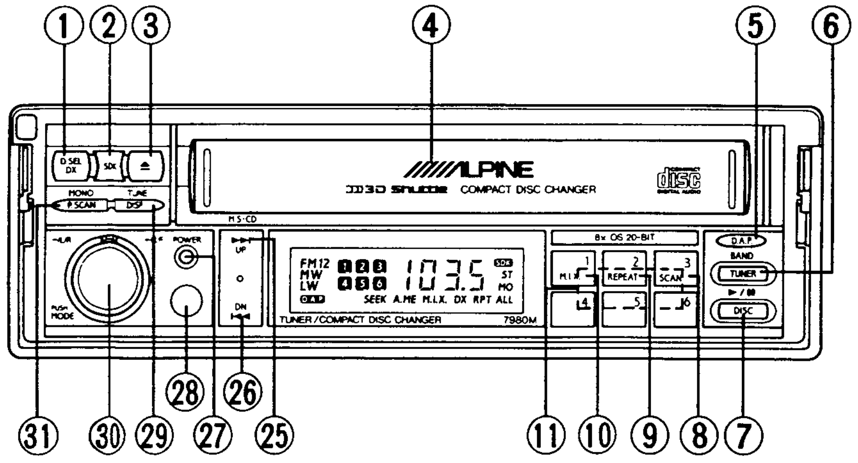
CAUTION:

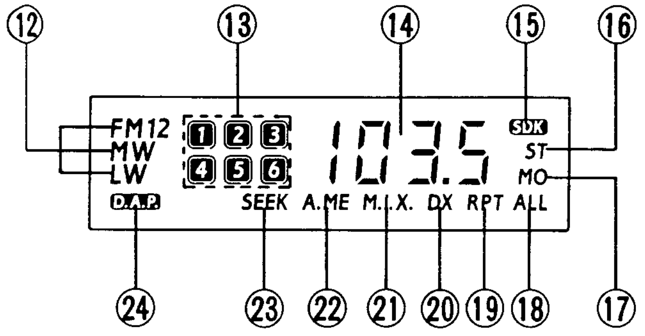
- Do not insert anything other than magazine into insertion slot.
- Do not remove the unit from the Q.R.B. before ejecting the magazine. If the unit with the magazine installed is dropped onto a floor, the disc will be damaged.

FEATURES

- **MAGAZINE HOUSING 3 CDs**
  Three 5-inch (12 cm) compact discs can be housed in the CD magazine. Any one of the 3 CDs in the magazine can be quickly and easily accessed for playback of the entire disc or individual selections.
- **FULL FRONT DIN™ CHASSIS**
- **Q.R.B. (QUICK RELEASE BRACKET)**
- **WIRELESS REMOTE CONTROL**
  The 7980M comes equipped with a wireless remote control that can control the tuner and CD changer functions.
- **8 TIMES OVERSAMPLING DIGITAL FILTER**
- **HYBRID IDAC**
  Alpine's 20-bit Hybrid interpolative DAC combines 1-bit D/A conversion technology (for excellent low level linearity) and a multi-bit D/A converter (for best Dynamic Range, Signal-to-Noise Ratio, and lowest distortion and noise characteristics).
  The result is flawless, accurate performance, outstanding resolution and detail along with superb Dynamic Range.
- **M.I.X.**
  The tracks on disc will be played randomly.
- **REPEAT**
  When the repeat button is pressed, the current track will be played back repeatedly.
- **DISC SCAN**
  Plays the beginning of each track for ten seconds before skipping to the next track. Upon locating the desired location, press the DISC SCAN button again to stop the scanning and play through the selection.
- **INTELLIGENT AUTO MEMORY**
  In the Auto Memory mode, the 6 strongest stations in each band will be stored automatically in the memory presets.
- **INTELLIGENT PRESET SCAN**
  The stations currently stored in memory preset locations are scanned automatically for ten seconds each.
  The Intelligent Preset Scan will only scan the strong stations. Weak stations will be skipped.
- **D.A.P. (DIRECT ACCESS PRESETS)**
  D.A.P. allows storing FM, MW and LW stations on the same band, eliminating the need to press the band select button. Up to 6 stations can be stored in the D.A.P. band.
- **LITETOUCH™ 30-STATION PRESETS**
  FM1: 6, FM2: 6, MW: 6, LW: 6, D.A.P.: 6
- **S.T.M. (SOURCE TONE MEMORY)**
  Automatically memorizes the settings of your Bass/Treble Controls for each source.
- **DUAL PRE-AMP OUTPUTS**
  Dual pre-amp outputs, along with a pre-amp fader, make easy and complete system expansion possible.

CONTROLS AND INDICATORS


①
②
③
④
⑤
⑥
D.SEL DX
SDK
MONO
TUNE
P.SCAN
DISP
/////ALPINE
COMPACT DISC CHANGER
disc
M.S-CD
POWER
UP
DN
MODE
FM12
MW
LW
D.A.P.
1035
ST
MO
SEEK A.ME M.I.X. DX RPT ALL
TUNER/COMPACT DISC CHANGER 7980M
8x OS 20-BIT
M.I.X.
REPEAT
SCAN
D.A.P.
BAND
TUNER
DISC
㉘
㉖
㉛
㉚
㉙
㉗
㉕
⑪
⑩
⑨
⑧
⑦


⑫
⑬
⑭
⑮
⑯
FM12
MW
LW
1 2 3
4 5 6
1035
SDK
ST
MO
D.A.P.
SEEK
A.ME
M.I.X.
DX
RPT
ALL
㉔
㉓
㉒
㉑
⑳
⑲
⑱
⑰

Listed below are all the Controls and their Indicators. Please see the Operation Section for explanations.

① **Disc SELect Button**
/DX (Local/Distance) Button
② **SDK Switch**
③ **Eject Button**
④ **Magazine Loading Slot**
⑤ **D.A.P. (Direct Access Preset) Button**

⑥ **TUNER/BAND Button**
⑦ **DISC (Play ▶ /Pause ❚❚) Button**
⑧ **SCAN Button**
⑨ **REPEAT Button**
⑩ **M.I.X. Button**

⑪ **Station Preset Buttons**
⑫ **Band Indicators**
⑬ **Preset Address Indicators**
⑭ **Digital Display**
⑮ **SDK Indicator**

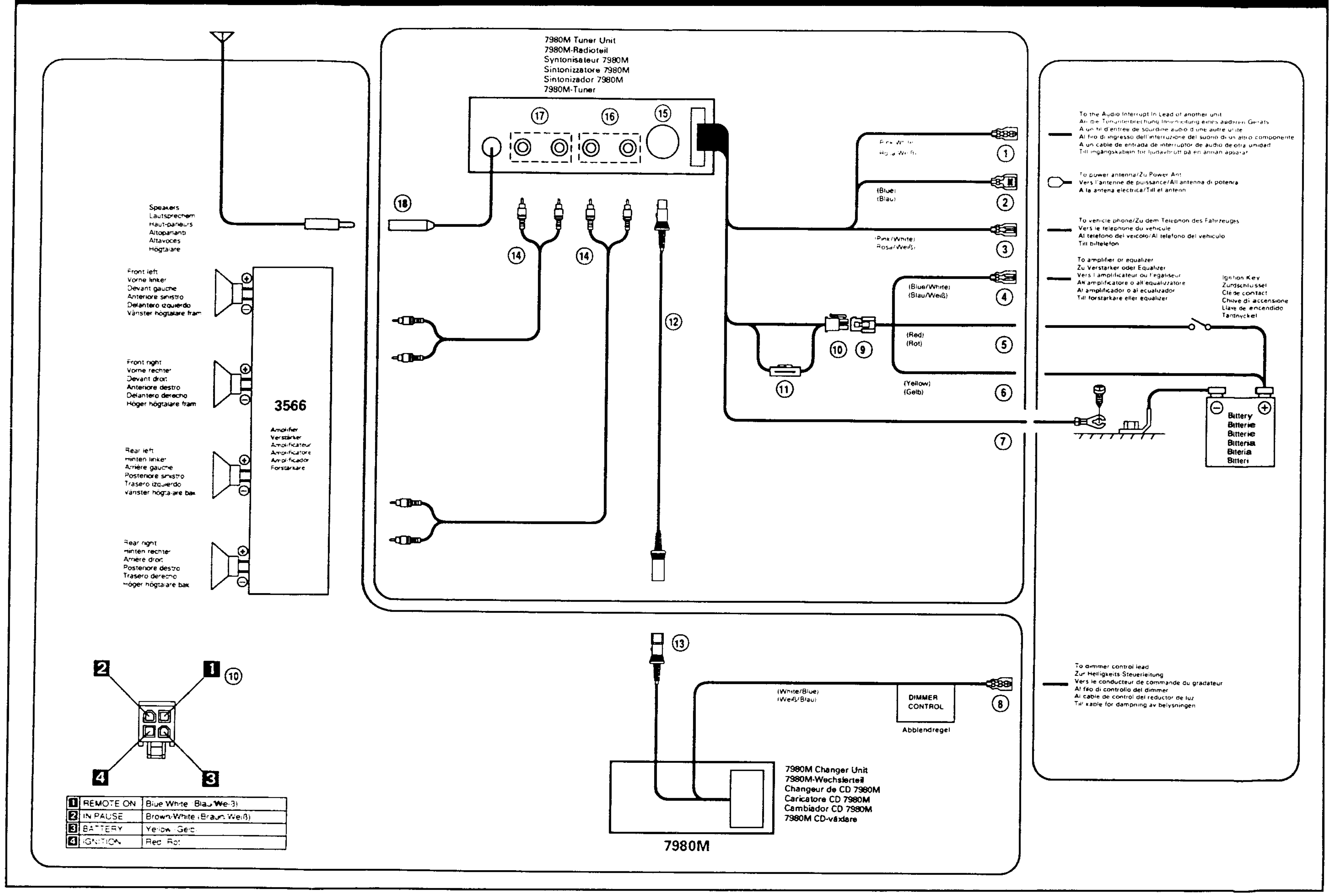
⑯ **STereo Indicator**
⑰ **MOno Indicator**
⑱ **ALL Repeat Indicator**
⑲ **RePeaT Indicator**
⑳ **DX Indicator**

㉑ **M.I.X. Indicator**
㉒ **A. MEmo Indicator**
㉓ **SEEK Indicator**
㉔ **D.A.P. Indicator**
㉕ **UP (▶▶|) Switch**

㉖ **DN (|◀◀) Switch**
㉗ **POWER On/Off Switch**
㉘ **Sensor Window for Remote Control**
㉙ **TUNE/DISP Switch**
㉚ **Audio MODE Select Switch**
/Audio Level Control

㉛ **MONO/Preset SCAN Button**

CONNECTIONS


Speakers
Lautsprechern
Haut-parleurs
Altoparlanti
Altavoces
Högtalare
Front left
Vorne linker
Devant gauche
Anteriore sinistro
Delantero izquierdo
Vänster högtalare fram
Front right
Vorne rechter
Devant droit
Anteriore destro
Delantero derecho
Höger högtalare fram
Rear left
Hinten linker
Arrière gauche
Posteriore sinistro
Trasero izquierdo
Vänster högtalare bak
Rear right
Hinten rechter
Arrière droit
Posteriore destro
Trasero derecho
Höger högtalare bak
3566
Amplifier
Verstärker
Amplificateur
Amplificatore
Amplificador
Förstärkare
7980M Tuner Unit
7980M-Radioteil
Syntonisateur 7980M
Sintonizzatore 7980M
Sintonizador 7980M
7980M-Tuner
⑰
⑯
⑮
⑱
⑭
⑭
⑫
(Pink/White)
(Rosa/Weiß)
①
(Blue)
(Blau)
②
(Pink/White)
(Rosa/Weiß)
③
(Blue/White)
(Blau/Weiß)
④
(Red)
(Rot)
⑤
(Yellow)
(Gelb)
⑥
⑩ ⑨
⑪
⑦
To the Audio Interrupt In Lead of another unit
An die Tonunterbrechung Inneneitung eines anderen Geräts
A un fil d'entree de sourdine audio d'une autre unite
Al filo di ingresso dell'interruzione del suono di un altro componente
A un cable de entrada de interruptor de audio de otra unidad
Till ingångskabeln för ljudavbrott på en annan apparat
To power antenna/Zu Power Ant
Vers l'antenne de puissance/All antenna di potenza
A la antena electrica/Till el antenn
To vehicle phone/Zu dem Telephon des Fahrzeuges
Vers le telephone du vehicule
Al telefono del veicolo/Al telefono del vehiculo
Till biltelefon
To amplifier or equalizer
Zu Verstarker oder Equalizer
Vers l'amplificateur ou l'egaliseur
All'amplificatore o all'equalizzatore
Al amplificador o al ecualizador
Till förstärkare eller equalizer
Ignition Key
Zündschlüssel
Clé de contact
Chiave di accensione
Llave de encendido
Tändnyckel
Battery
Batterie
Batterie
Batteria
Batería
Batteri
2
1
⑩
4
3
⑬
(White/Blue)
(Weiß/Blau)
DIMMER CONTROL
Abblendregel
⑧
To dimmer control lead
Zur Helligkeits-Steuerleitung
Vers le conducteur de commande du gradateur
Al filo di controllo del dimmer
Al cable de control del reductor de luz
Till kable för dampning av belysningen
7980M Changer Unit
7980M-Wechslerteil
Changeur de CD 7980M
Caricatore CD 7980M
Cambiador CD 7980M
7980M CD-växlare
7980M

1	REMOTE ON	Blue/White (Blau/Weiß)
2	IN PAUSE	Brown/White (Braun/Weiß)
3	BATTERY	Yellow (Gelb)
4	IGNITION	Red (Rot)

① **Audio Interrupt Out Lead (Pink/White)**

② **Power Antenna Lead (Blue)**
When loaded with a power antenna, connect to the +B terminal of the power antenna.

③ **Audio Interrupt In Lead (Pink/White)**

④ **Remote Turn-On Lead (Blue/White)**
Connect this lead to the remote turn-on lead of your amplifier or signal processor.

⑤ **Switched Power Lead (Ignition) (Red)**
Connect this lead to an open terminal on the vehicle's fuse box or another unused power source which provides (+)12V only when the ignition is turned on or in the accessory position.

⑥ **Battery Lead (Yellow)**
Connect this lead to the positive (+) post of the vehicle's battery.

⑦ **Ground Lead**
Connect this lead to a good chassis ground on the vehicle.
Make sure the connection is made to bare metal and is securely fastened using the sheet metal screw provided.

⑧ **Dimmer Control Lead (White/Blue)**
Connect this lead to the lead in the vehicle's parking lights circuit that provides (+)12V when the parking lights are turned on. This will dim the unit's backlighting at night when the parking lights are on.

⑨ **Power Wiring Harness (Included)**
Connect to the Power Supply Connector ⑩.

⑩ **Power Supply Connector**
Connect to the receptacle of Power Wiring Harness ⑨.

⑪ **Fuse Holder (3A)**

⑫ **DIN Extension Cable (Included)**

⑬ **DIN Connector**
Connect this to the DIN connector on the Tuner Unit.

⑭ **RCA Extension Cable (Sold Separately)**

⑮ **DIN Jack**

⑯ **Rear RCA Jacks**
RED is right and WHITE is left.

⑰ **Front RCA Jacks**
RED is right and WHITE is left.

⑱ **Antenna Receptacle**

OPERATION

‹ BASIC OPERATION ›

Preparation for Playback

1. Insert your discs (up to 3) into the disc slots of the CD magazine with the label side facing up (Fig. C).

   To remove discs already in the CD magazine, push the lever on the CD magazine for the disc you wish to eject. The disc will come halfway out from the CD magazine, so pull out the disc by grasping the disc by the edge with your hand (Fig. D).
   NOTE:
   Hold the disc so you will not leave fingerprints on the disc surface (refer to "PROPER CARE OF YOUR DISC" section).

2. Insert the CD magazine all the way into the 7980M with the narrow side facing the unit as shown here (Fig. E).

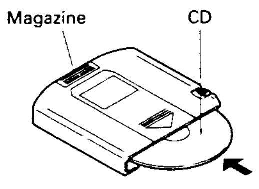


Fig. C

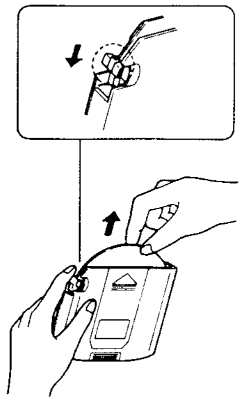


Fig. D

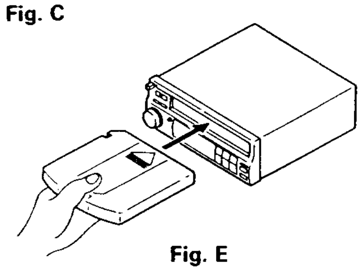


Fig. E

NOTES:

1. Do not insert heat-deformed discs into the CD magazine.
2. Do not forcibly remove the CD magazine by hand.
3. Only one disc can be inserted in each housing slot. Attempting to insert another disc may cause damage.
4. Only compact discs containing the mark shown below can be used.

COMPACT
disc
DIGITAL AUDIO

5. To play 3-inch discs, you must use the (4908) adapter ring.
6. When using the 3-inch discs, insert only one disc, not more than one.

OPERATION

Indication example	Turn the Audio MODE Select switch.	
	Left	Right
VOL adjust. (0 — 35) 25	Volume Minimum 0	Volume Maximum 35
TRE adjust. (−7 — +7) TR-4	Treble Minimum TR-7	Treble Maximum TR+7
BAS adjust. (−7 — +7) BS-3	Bass Minimum BS-7	Bass Maximum BS+7
BAL adjust. (— — 8) B---	Output at Left Channels only BL 8	Output at Right Channels only BR 8
FAD adjust. (— — 8) F---	Output at Rear Channels only FR 8	Output at Front Channels only FF 8

How to adjust the volume and tone (Refer to the diagram above.)

1. Turn on the system by pushing the POWER On/Off switch ㉗ or any other button (other than Eject button ③).
2. Press the Audio MODE Select switch ㉚ to select each adjusting mode.

   VOL → TRE → BAS → BAL → FAD → VOL · · · ·

   Each time this switch is pressed, the mode changes. The mode is indicated in the display. The mode indicator changes as each mode is selected.
3. Once the desired mode appears in the display, rotate the Audio MODE Select switch ㉚ to make your adjustment. The display will return to the previous mode indication after five seconds.

Power Off
Press the POWER switch ㉗ to turn the unit off.

OPERATION

S.T.M. (Source Tone Memory)

The Bass and Treble controls can be individually set for each source (FM, MW/LW, and CD). Once set, their positions are automatically memorized. Whenever the source is reselected, the Bass and Treble controls will return to your preset configuration.

Function Switching

1. Tuner Mode
   Press the TUNER/BAND button ⑥ to switch from CD to Radio.
2. CD Mode
   Press the DISC (▶/❚❚) button ⑦ to switch from Radio to CD.

‹ RADIO OPERATION ›

If the unit is not in the Radio mode, press the TUNER/BAND button ⑥.

Tuning Band Selection

Press the TUNER/BAND button ⑥ to select the desired tuning band. The Band indicator ⑫ shows your selection.

Switching the FM Volume

Use this function if the difference in volume is great when switching between a CD and the FM radio.

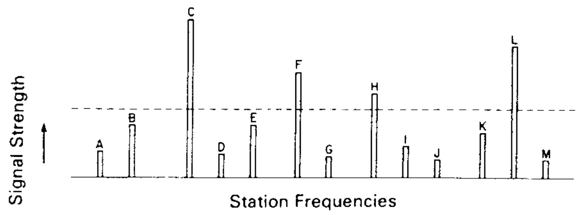
1. Press the TUNE switch ㉙ for 2 seconds.
2. Press the Preset No. 1 button ⑪ to switch the display between "F-HI" and "F-LO". The FM volume can be set to one of two positions, high or low. Set the position according to the broadcast station.

Local/Distance (DX) Sensitivity Switching for FM, MW and LW

You can select the radio SEEK sensitivity (local or distance (DX)) by pressing the DX button ① for more than two seconds.

In the distance mode, with DX indication ⑳, the radio tunes in both strong and weak stations (all stations from A to M in the illustration).

In the local mode, with no DX indication ⑳, the radio tunes in only strong stations (stations C, F, H and L in the illustration below).



OPERATION

FM Stereo/Monaural Switching

You can select between the Auto Switching or Monaural only for FM reception by pressing the MONO button ㉛. In the Auto Switching mode, you can receive stereo broadcasts in stereo and monaural broadcasts in MONO. The STereo ⑯ or MOno indicator ⑰ shows you which one is being received. In the monaural mode, you will receive the broadcast in monaural only, even if the broadcast is in stereo. The monaural only mode quiets the noisy stereo signal of weaker broadcasts. The STereo indicator will not appear while the Monaural mode is selected.

Manual Tuning

1. Press the TUNE switch ㉙ until the SEEK ㉓ and A. MEmo ㉒ indicators disappear in the display.
2. To select the tuning band, press the TUNER/BAND button ⑥. The Band indicator ⑫ shows your selection.
3. To tune to higher frequencies, press the UP switch ㉕. To tune to lower frequencies, press the DN switch ㉖.

Auto SEEK Tuning

1. Press the TUNE switch ㉙ until the SEEK indicator ㉓ appears in the display.
2. Select the tuning band with the TUNER/BAND button ⑥.
3. Press the UP ㉕ or DN ㉖ switch. The unit automatically tunes to the next higher or lower frequency and locks on that station.

Manual Memory Programming

Follow the instructions below to enter stations into preset memory:

1. Select the tuning band (FM1, FM2, MW, LW) with the TUNER/BAND button ⑥.
2. Tune in your desired station using manual or auto seek tuning.
3. Press the Preset button number 1 ⑪ for more than two seconds. The preset indicator ⑬ in the display will begin to blink. The tuning band (FM1, FM2) can be changed by pressing the TUNER/BAND button ⑥ if you wish to change bands. Press that Preset button again while the display is blinking (within 5 seconds).
4. The frequency you selected will be placed into Preset Memory number 1 and will appear in the display.
   NOTE:
   If a preset memory has already been set in the same address, it will be cleared and the new station will be memorized.
5. Follow steps 2 — 4 for the remaining presets (2 — 6). This procedure should be followed for FM1, FM2, MW and LW.

NOTE:

While setting the memory presets you can switch back and forth between FM1 and FM2. However, while in this mode you cannot switch back and forth from MW/LW to FM.

OPERATION

Auto Memory Preset

1. Press the TUNE switch ㉙ to light up the A. MEmo indicator ㉒.
2. Select the desired tuning band (FM1, FM2, MW or LW) with the TUNER/BAND button ⑥.
   NOTE:
   The Auto Memory Preset procedure is allowed in the D.A.P. Mode.
3. Press the UP ㉕ or DN ㉖ switch. The tuner will automatically seek the six strongest stations in the selected band and memorize them in order of their signal strength. These stations are automatically placed in the preset memory with the strongest station in Preset No. 1 and the 6th strongest station in Preset No. 6. When seeking stations, the tuner first seeks in the local tuning mode. If less than 6 stations are memorized, the tuner seeks again in the distance (DX) mode.
4. After finishing the Auto Memory Preset, the tuner goes to the station placed in Preset Memory No. 1. If no stations are memorized, it returns to the original station you were listening to before the Auto Memory Preset procedure began.

Preset Tuning

After the preset stations have been memorized, you can tune in your desired station (within the band displayed) with one touch of a button.

1. Select the tuning band (FM1, FM2, MW or LW) with the TUNER/BAND button ⑥.
2. Press any one of the Preset buttons ⑪ and the number of that preset will illuminate in the matrix display.
3. The frequency of the station placed in the selected preset location will appear in the display.

D.A.P. (Direct Access Presets)

This feature allows the storage of FM, MW and LW presets on the same band. Press the D.A.P. button ⑤ to light up the D.A.P. indicator ㉔. To program stations into the D.A.P. band, follow steps 1 — 4 as described in the Manual Memory Programming section on page 14.

Accessing the D.A.P. Presets

1. Press the D.A.P. button ⑤. The D.A.P. indicator ㉔ will illuminate in the display.
2. Press one of the Preset buttons ⑪.
3. The frequency of the station placed in the selected D.A.P. location will appear in the display.

Preset Scan

This feature locates the six stations preset in memory on each band and plays 10 seconds of each, in numerical order from Preset No. 1 to No. 6.

1. Select your desired tuning band by pressing the TUNER/BAND button ⑥.
2. Press the P. SCAN button ㉛ for more than two seconds.
3. The digital display will indicate the frequency of the preset station tuned in and the corresponding preset indicator in the display (for each preset 1 through 6) will blink. For FM presets it will scan FM1, then FM2 and continue to cycle between these two bands.
4. When your desired preset station is reached, press the P. SCAN button ㉛ for a second time. The indicator on the Preset button will stop blinking and the tuner will remain on the selected station.

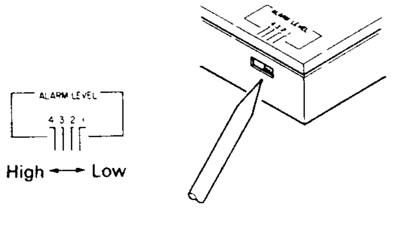
OPERATION

● **Traffic Information Receiving**

This model is equipped with traffic information receiving apparatus to be used in West Germany where the traffic information is broadcast in FM. The following is how to use this unit to receive traffic information broadcasting.

Four preset volume levels can be set for traffic information reception in the SDK mode.

Set the ALARM LEVEL selector switch on the Tuner Unit to the desired level.



NOTE:

When setting the ALARM LEVEL, be sure to turn the ACC power supply OFF.

Two ways are selectable when traffic information reception signal is weak in the SDK mode.

1. Press the TUNE switch ㉙ for 2 seconds.
2. Press the Preset No. 3 button ⑪ to switch the display between "ALA" and "SRCH". When the ALA is selected, alarm goes off and when the SRCH is selected, other broadcast station is sought automatically.

• **Radio Mode**

1. Select FM position.
2. Depress the SDK switch ② and tune to a station. If the station is a traffic information station, the SDK indicator ⑮ will glow and show the reception of a broadcast from a traffic information station.
   NOTE: SDK Indicator
   When SK signal is received irrespective of the SDK switch position, the SDK indicator will illuminate.
3. In the SDK mode, stations other than traffic information stations are muted and cut out. Therefore, it is easy to select a traffic information station.
4. As the signal of the tuned traffic information station becomes weak, the SDK indicator will extinguish. Then after the lapse of 25 seconds, a rhythmical alarm will sound to urge retuning to another stronger station. If the reception of further traffic information is required, tune in the desired traffic information station. When received, the alarm will stop and the SDK indicator illuminates. Since the alarm will continue if no signals from any other traffic stations can be received, release the SDK switch for reception of normal broadcasting.

OPERATION

5. Even if the Volume control ㉚ is set to the minimum position, the volume of the traffic information will be automatically adjusted to the level preset by the special volume control on the Tuner Unit. After the message, the sound volume returns to the previously adjusted level.
6. If traffic information reception is no longer necessary, release the SDK switch for normal radio reception.

NOTES:

- When the SDK switch is pressed and there is no SK signal, ALARM will sound after the lapse of 25 seconds. Press the SDK switch again to stop it.
- When the SEEK operation is carried out with the SDK switch turned on, the SEEK operation stops at a traffic station only.
- The A. MEMO operation with the SDK switch turned on: only the traffic stations will be memorized.
- This system has a special volume control on the Tuner Unit for adjusting the volume level for SDK reception and the alarm which will sound when there is no SK signal in the SDK mode. Set the Volume control ㉚ to the minimum level position, and adjust the special volume control on the Tuner Unit to your desired level with a screwdriver.

- **CD Mode**

1. When the unit is playing a CD with the SDK switch pushed in and tuned to a traffic information station, the CD play is interrupted and changed to FM radio if the pre-tuned station begins a traffic information message. When the message is over, the unit reverts to CD play automatically.
2. Only when the SDK switch is on, the SDK display will appear if a traffic information station is being tuned.
3. When your receiver cannot receive a traffic information station after a reception of the traffic information station with the SDK switch on, the receiver automatically starts a SEEK operation after 25 seconds, and receives another station.
4. When the TUNE switch ㉙ is pushed with the SDK switch turned on, the radio display will appear for 5 seconds with the sound remained the same condition to allow confirmation for the station being received. Under this condition, tuning operation can be made also.

OPERATION

‹ CD OPERATION ›

If a magazine has already been inserted into the unit, and the unit is not in the CD mode, press the DISC button ⑦.

Disc Loading

1. Insert a magazine into the Magazine Loading slot ④.
2. The digital display shows "T-00".
3. Press the DISC (▶/❚❚) button ⑦.
4. The magazine will move out from the 7980M and the discs inside the magazine will be loaded.
5. Play will start from the first track of the first disc. Note that in the case where the magazine was already loaded, play will begin from the place where the play last stopped.

CAUTION:

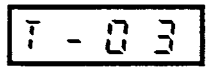
When the 7980M is changing discs, the magazine will be pushed out from the front of the unit. During this process, do not touch the magazine or subject it to strong shocks as this could result in damage to the mechanism. If the 7980M is mounted in a location that could interfere with your driving (such as changing gears), operate the unit keeping in mind the movement of the magazine.

NOTES:

- When the last track of the disc finishes playing, play will begin automatically with the first track of the next disc.
- When the last track of the third disc inside the disc magazine finishes playing, the 7980M returns to disc 1 and repeats playback of the entire magazine.

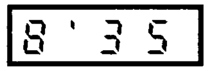
CD Display Switching

In the CD mode, the display will show the Disc and Track Number (Fig. 1) or the Elapsed Time (Fig. 2). Press the DISP switch ㉙ to select between the Disc/Track number and the Elapsed Time indicators.



Track Mode

Fig. 1



Time Mode

Fig. 2

OPERATION

Pause

While the disc is playing, press the DISC (▶/❚❚) button ⑦ to temporarily stop playback. The digital display ⑭ will show "PAU". To resume playback, press the DISC (▶/❚❚) button ⑦ again.

Music Sensor (Skip)

This feature allows you to access the beginning of your musical track selection simply and quickly. It is functional in the play or pause mode. The digital display ⑭ shows the track number you have selected.

- To advance to the next track on the disc, press and release the UP (▶▶|) switch ㉕.

1. Playback stops, and the pickup moves up to the beginning of the next track. That track number appears in the digital display ⑭.
2. Playback begins immediately.
3. If you wish to access a track further ahead on the disc, continue pressing and releasing the UP (▶▶|) switch ㉕ until you reach the track of your choice.

- To replay the track that is currently playing, press and release the DN (|◀◀) switch ㉖.

1. Playback stops, and the pickup moves back to the beginning of the current track. The track number in the digital display ⑭ remains the same.
2. Playback begins immediately from the beginning of the track.
3. If you wish to access a track further towards the beginning of the disc, continue pressing and releasing the DN (|◀◀) switch ㉖ until you reach the track of your choice.
4. When you reach the last track on the disc, the pickup automatically returns to the first track. When you reach the first track using the DN (|◀◀) switch ㉖, the pickup automatically goes to the track.

Fast Forward/Fast Backward

The Fast Forward/Fast Backward feature works in both play and pause modes.

1. Press either the UP (▶▶|) ㉕ or the DN (|◀◀) ㉖ switch and hold it down for more than 2 seconds.
2. To move the pickup forward rapidly, hold down the UP (▶▶|) switch ㉕.
3. To move the pickup backward rapidly, hold down the DN (|◀◀) switch ㉖.
4. Release the button when you get to the desired position on the disc.
5. When the pickup reaches the end of the disc, it will then begin playback from the beginning of the first track.

Repeat (One/All)

This feature allows you to continuously repeat a single track or one entire disc.

To Repeat a Single Track

1. Locate the music track of your choice using the UP (▶▶|) ㉕ or DN (|◀◀) ㉖ switch.
2. Press the REPEAT button ⑨.
   The RPT indicator ⑲ will illuminate.
   The music track will be played back repeatedly.
3. To stop repeat play, press the REPEAT button ⑨ twice. The indicator switches from RPT to RPT ALL and the illumination will be off.

To Repeat an Entire Disc

1. While playing a disc, press the REPEAT button ⑨ until the RPT ⑲ and ALL ⑱ indicators will illuminate.
2. The disc will be played back repeatedly.
3. To stop repeat play, press the REPEAT button ⑨ once. The indicator illumination will be off.

Disc Scan

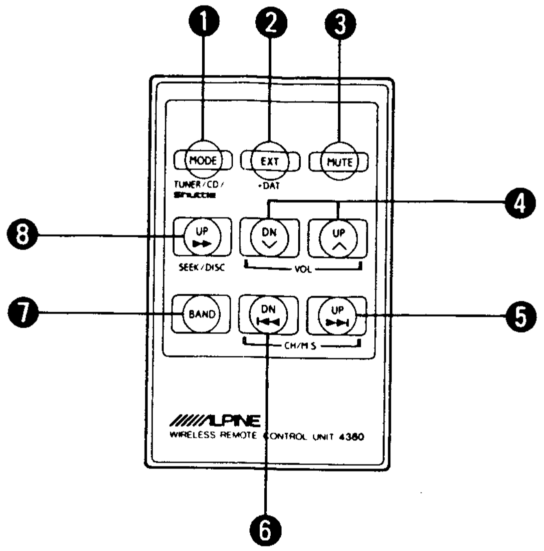
Press the SCAN button ⑧ and the unit will playback the first 10 seconds of each track in succession. This function is useful in searching ahead on a disc for a specific selection. Pressing the SCAN button ⑧ a second time deactivates the function.

M.I.X. (Random Play)

Press the M.I.X. button ⑩ while the unit is in the play or pause mode. Musical tracks on the selected disc will be played back in a random sequence generated by the microprocessor. After all the tracks on the disc have been played back once, the player will play the next disc in this function.

OPERATION

‹ REMOTE CONTROL OPERATION ›



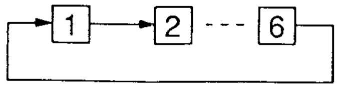
❶ **Mode Selecting Button** (MODE)

❷ **This button is not used for 7980M.** (EXT)

❸ **Mute Button** (MUTE)
When this button is pressed, the sound signal is immediately down 20 dB in an instant.

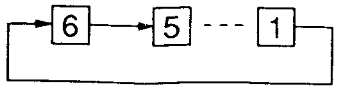
❹ **Volume Adjusting Button**
To turn up the volume .... (UP ^) button
To turn down the volume.. (DN v) button

❺ **(UP ▶▶|) Button**
During radio operation:
This button allows the preset to be changed in increasing order (see below).



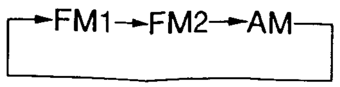
During CD operation:
Use of this button will cause the CD to skip to the next track.

❻ **(DN |◀◀) Button**
During radio operation:
This button allows the preset to be changed in decreasing order (see below).



During CD operation:
Use of this button will cause the CD to skip backwards to the beginning of the current track or previous tracks.

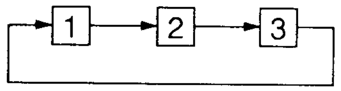
❼ **(BAND) Button**
During radio operation:
Select desired radio band (see below).



OPERATION

❽ **(UP ▶▶) Button**
During radio operation:
This button will cause the radio to seek the station at the next highest frequency.
Continue holding the button to skip several stations.

During CD operation:
Using this button will cause the 7980M to load the next CD in the magazine (see below).



NOTE:

As for the remote control (4380), operate each button facing the front of the body of 7980M.

For the results operating the 4380 (remote control), make sure it is pointed in the general direction of the 7980M.

CAUTIONS:

- This unit can be used for the model corresponding to the remote control unit manufactured by Alpine. However, it must be noted that the operational functions differ with models to be controlled.
- This unit is small and light weight. Take care not to drop or hit it. Do not put the unit in a pocket where it might be sat on or exposed to undue stress or dirt. This could cause shorter cell life and circuit malfunction.
- To take out a stain from this unit, wipe it with a slightly damp cloth.
- Never use a kind of benzine or thinner because they cause the case or the coating to change in quality.
- Protect this unit from dust and moisture, and take care not to give it a hard shock or to pour drinks on it.
- In summer, the temperature sometimes rises in the car. In such a case, first open the window and use this unit after driving the car for a while to cause the temperature to fall.
- Take care not to put this unit on a place exposed to the direct sunlight, such as the dashboard.
- Use this unit so as not to cause the driving to be disturbed.

Cell Replacement

Applicable cell . . . Use one CR2025 or equivalent.

1. **Opening the Cell case**
   Looking at the back of the remote, grasp the bottom of the unit between your forefinger and thumb. Place yout thumbnail into the slot and pull out gently. A small coin or screwdriver can also be used with a gentle twisting motion (Fig. F).
2. **Replacing the Cell**
   Put the cell in the case with the (+) indication upward as shown in the illustration (Fig. G).
3. **Closing the case**
   Push the cell holder back into the remote until a click is heard (Fig. H).

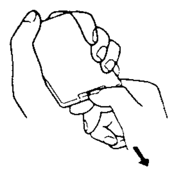


Fig. F

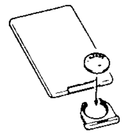


Fig. G

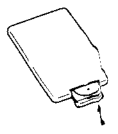
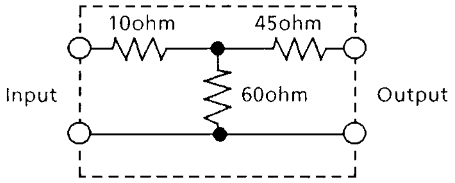


Fig. H

Adjustment Procedures

1 FM SECTION

(1) Dummy Antenna Circuit


10ohm
45ohm
Input
60ohm
Output

For 50 ohm FM Signal Generator

Figure 1

(2) Connections

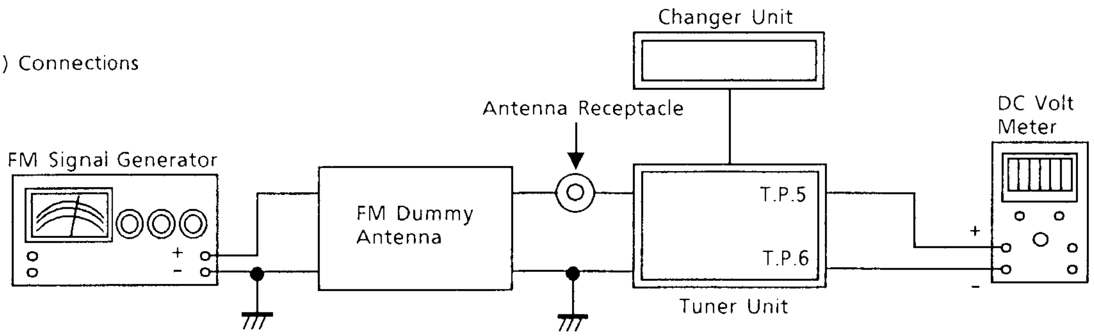

Changer Unit
Antenna Receptacle
DC Volt Meter
FM Signal Generator
FM Dummy Antenna
T.P.5
T.P.6
+
-
Tuner Unit

Figure 2

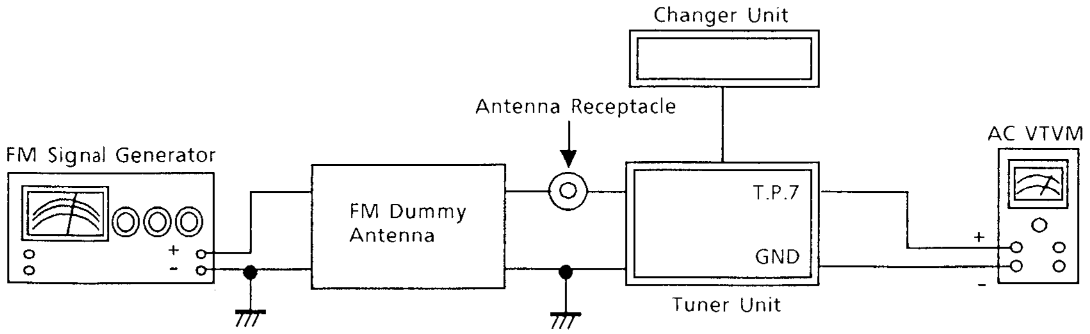

Changer Unit
Antenna Receptacle
AC VTVM
FM Signal Generator
FM Dummy Antenna
T.P.7
GND
+
-
Tuner Unit

Figure 3

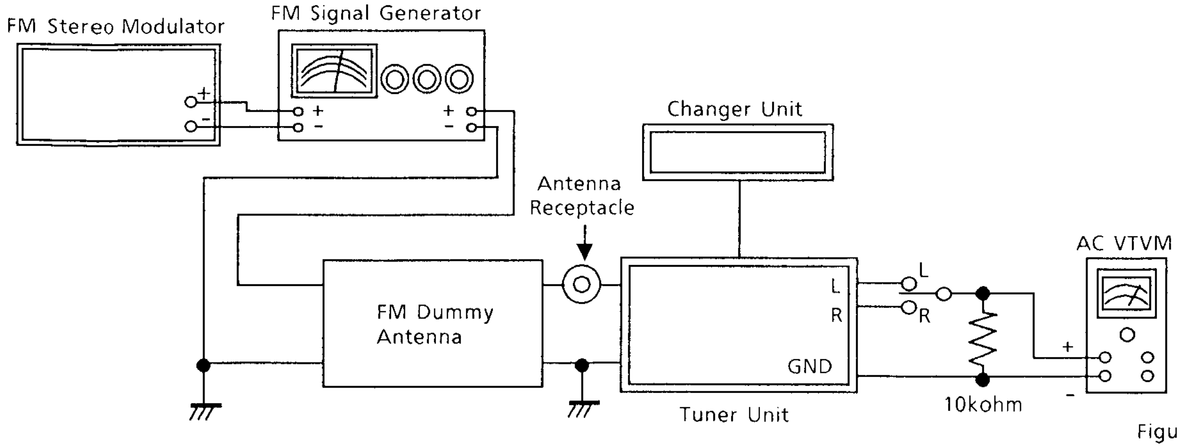

FM Stereo Modulator
FM Signal Generator
Changer Unit
Antenna Receptacle
AC VTVM
FM Dummy Antenna
L
R
GND
+
-
Tuner Unit
10kohm

Figure 4

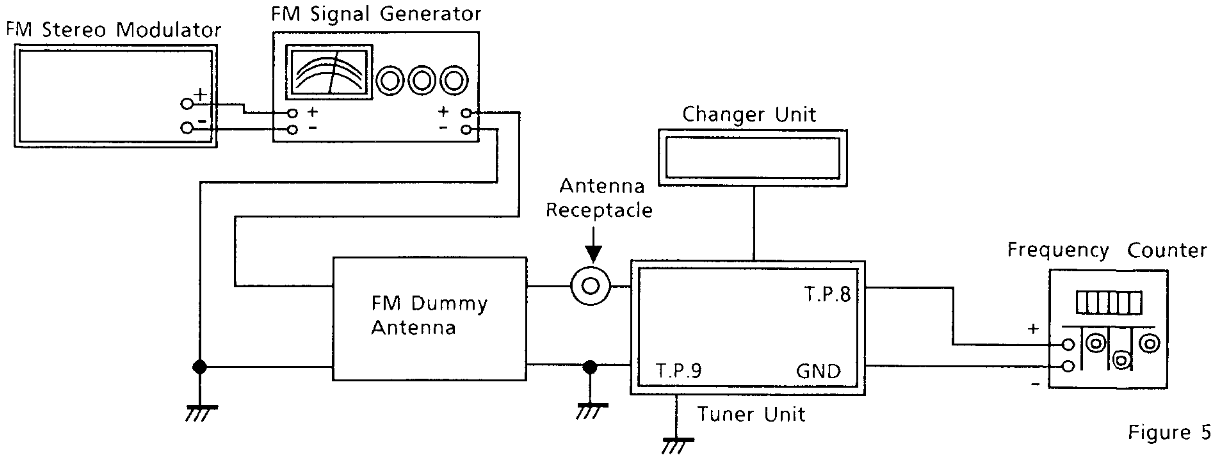

FM Stereo Modulator
FM Signal Generator
+
-
+
-
Changer Unit
Antenna
Receptacle
FM Dummy
Antenna
T.P.8
T.P.9
GND
Tuner Unit
Frequency Counter
+
-

Figure 5

(3) Control Settings (Changer Unit)

Power Switch	ON
Fader Control	Front Position
Balance Control	Center Position
Treble / Bass Control	Center Position
Band Switch	FM
Others	OFF

(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	IF Adjustment		Figure 2	98.1MHz, 60dB (Mod. OFF)	98.1MHz	T.P.5 T.P.6	Adjust T2101 to 0 ± 30mV.
2	Seek Stop Adjustment		Figure 3	98.1MHz, 15dB (Mod. 400Hz, Dev. 22.5kHz)	98.1MHz	T.P.7	Adjust VR2101 to obtain 15 ± 5dB T.P.7 Output.
3	Noise Level Adjustment	(1)	Figure 4	98.1MHz, 60dB (Mod. 400Hz, Dev. 22.5kHz)	98.1MHz	Audio Output	Adjust S419 (VOLUME) to obtain 500mV output. This value is 0dB.
		(2)	Figure 4	98.1MHz, -19dB (Mod. 400Hz, Dev. 22.5kHz)	98.1MHz	Audio Output	Adjust VR2102 to 34 ± 3dB output at SG level minimum.
4	VCO Adjustment		Figure 5	98.1MHz, 60dB (Mod. 400Hz, Dev. 22.5kHz)	98.1MHz	T.P.8	Adjust VR001 to read 19± 0.05kHz on Counter at T.P.8.

Step	Description	Connection	Signal Generator	Dial Control	Test Point	Adjustment
5	Stereo Separation Adjustment (Lch)	Figure 4	98.1MHz, 60dB (Stereo Mod, Lch, only)	98.1MHz	Audio Output	Adjust VR003 for Rch output to be minimum and confirm Lch and Rch output level difference is more than 25dB.
6	Stereo Blend Adjustment (Lch)	Figure 4	98.1MHz, 34dB (Stereo Mod, Lch, only)	98.1MHz	Audio Output	Adjust VR002 for Lch and Rch output level difference to be 8dB.
7	Stereo Separation Adjustment (Rch)	Figure 4	98.1MHz, 60dB (Stereo Mod, Rch, only)	98.1MHz	Audio Output	Proceed same adjustment under step 5 by alternating Lch and Rch.
8	Stereo Blend Adjustment (Rch)	Figure 4	98.1MHz, 34dB (Stereo Mod, Rch, only)	98.1MHz	Audio Output	Proceed same adjustment under step 6.

2 SDK SECTION

(1) Dummy Antenna Circuit

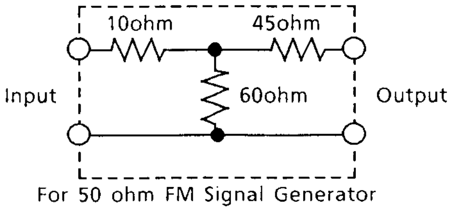
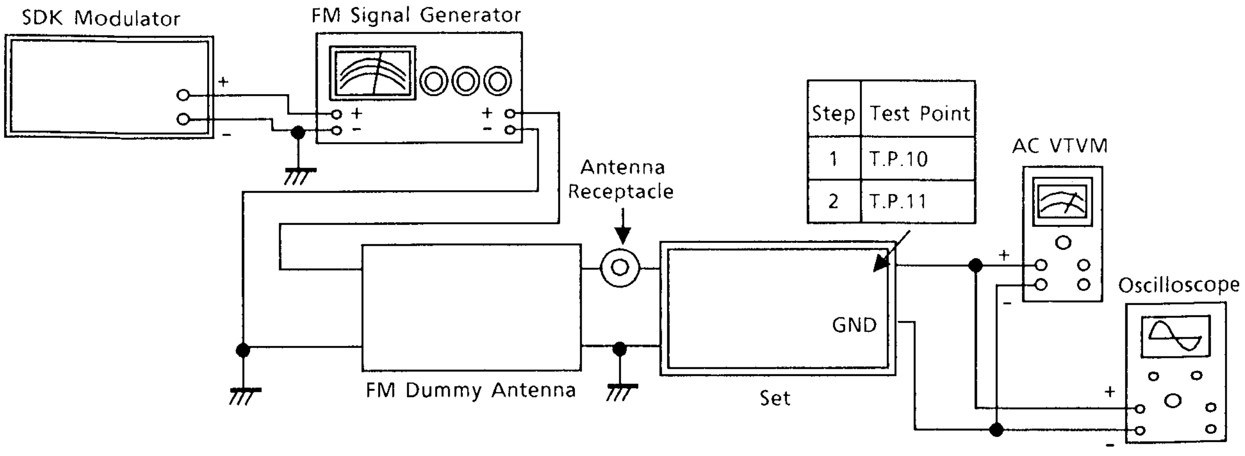

10ohm
45ohm
60ohm
Input
Output
For 50 ohm FM Signal Generator

Figure 6

(2) Connections


SDK Modulator
FM Signal Generator
+
-
Antenna Receptacle
FM Dummy Antenna
Set
GND
AC VTVM
Oscilloscope

Step	Test Point
1	T.P.10
2	T.P.11

Figure 7

(2) Control Settings

Power Switch	ON	Treble / Bass Control	Center Position
Band Select Switch	SDK	Fader Control	Front
Balance Control	Center Position	Others	OFF

(3) Adjustment Procedures

Step	Description	Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	SK Adjustment	Figure 7	98.1MHz, 60dB (SK, BK, DK : ON) (Mod, 1kHz Dev. 22.5kHz)	98.1MHz	T.P.10	L002 for Maximum Output.
2	DK Adjustment	Figure 7	98.1MHz, 60dB (SK, BK, DK : ON) (Mod, 1kHz Dev. 22.5kHz)	98.1MHz	T.P.11	VR004 for Maximum Output.

3 Compact Disc SECTION

(1) Preparation of Before Adjustment

① Remove the Base Chassis of Changer Unit.

② Use the wire to connect each Test Point on CD - LSI P.C.Board.

Note. After adjustment, securely remove the solder used to connect the wire.

(2) Connections

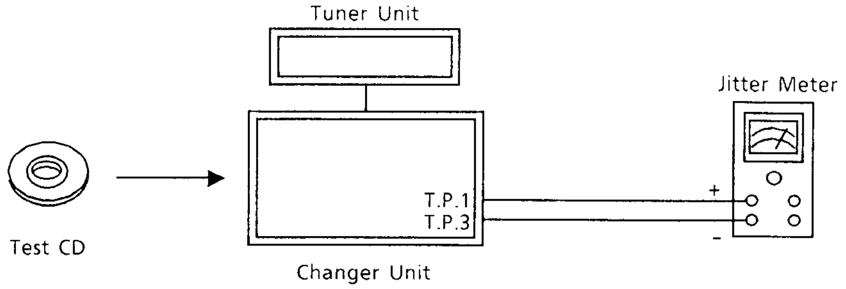

Tuner Unit
Jitter Meter
T.P.1
T.P.3
+
-
Test CD
Changer Unit

Figure 8

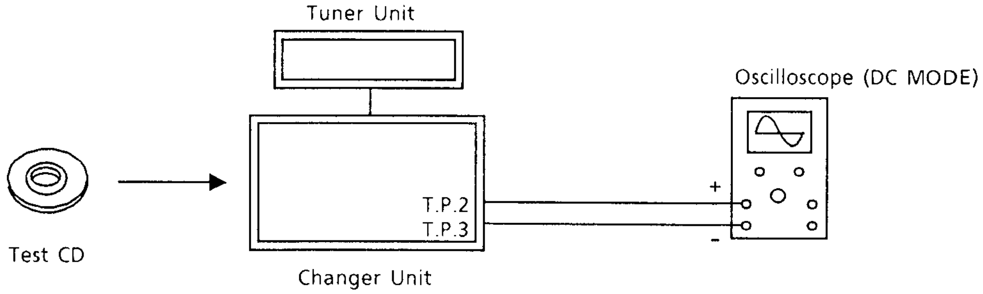

Tuner Unit
Oscilloscope (DC MODE)
T.P.2
T.P.3
+
-
Test CD
Changer Unit

Figure 9

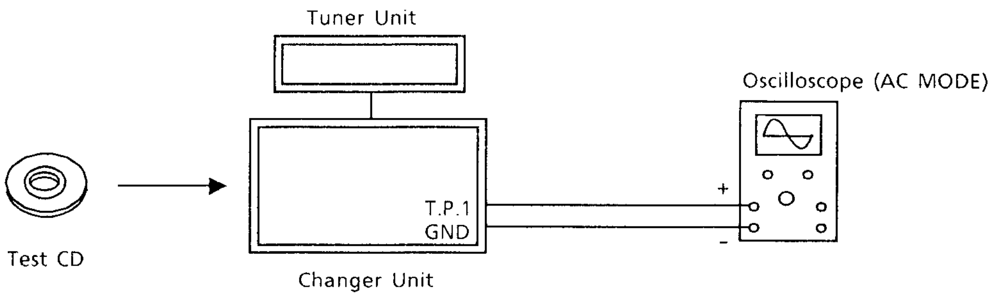
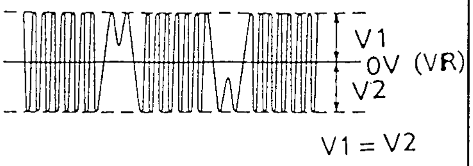


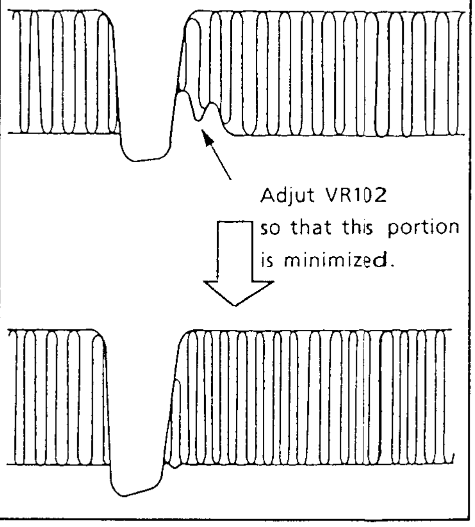
Figure 10

(3) Control Settings (Changer Unit)

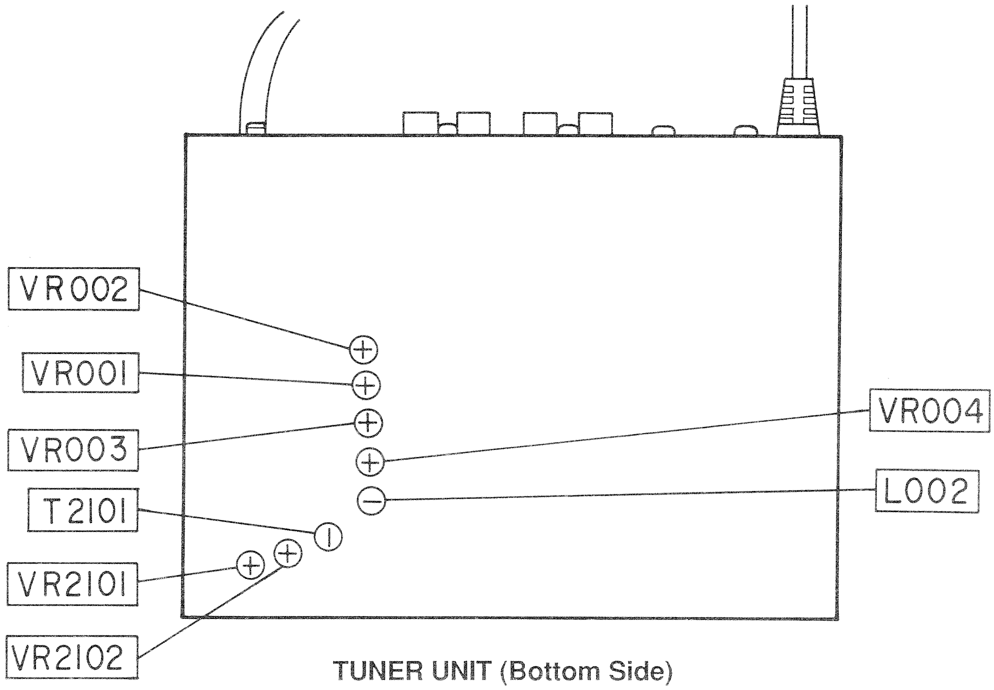
Power SW	ON
Fader Control	Center Position
Balance Control	Center Position
Treble / Bass Control	Center Position
Others	OFF

(4) Adjustment Procedures

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
1	Jitter Adjustment	TCD - 782 Track No.1 (A-BEX)	Figure 8	T.P.1 T.P.3	VR103	①: Set the mode to playback with the test disc loaded. ②: Using the jitter meter, measure the T.P.1 signal. ③: First, rotate VR103 fully counter-clockwise. ④: Next, carefully rote VR103 clockwise untill the jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.
2	Tracking Balance Adjustment	TCD - 782 Track No.8 (A-BEX)	Figure 9	T.P.2 T.P.3	VR101	①: Set the mode to playback with the test disc loaded. ②: Connect the wire of T.P.3 to T.P.4. ③: Using the oscilloscope, measure the T.P.2 signal in reference to VR. (VR standard = 0V) ④: Adjust VR101 so that the positive and negative deflection widths of the T.P.2 signal are at the same level, relative to VR (0V). (The entire waveform moves up and down.)  ⑤: After adjustment, disconnect the wire of T.P.3 and T.P.4

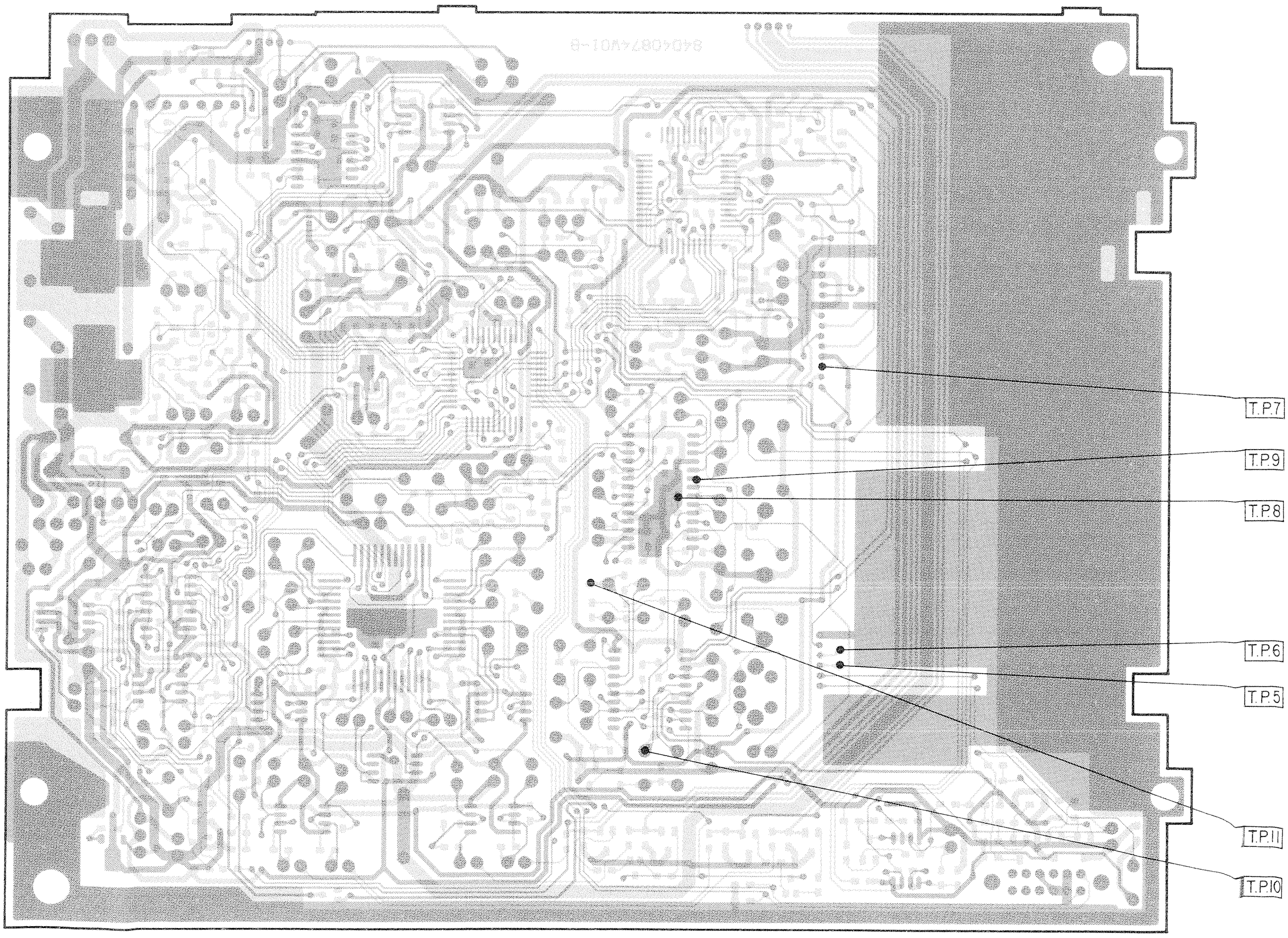
Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
3	Tracking Offset Adjustment	TCD-721 Track No.6 (A-BEX)	Figure 10	T.P.1	VR102	① : Set the mode to playback with the test disc loaded. ② : Using the oscilloscope, measure the T.P.1 signal. ③ : Adjust VR102 in order to minimize the waveform induced by the reaction to the omission of the T.P.1 signal. ④ : Conduct the tracking balance adjustment once again. 

Adjustment Locations


VR002
VR001
VR003
T2101
VR2101
VR2102
VR004
L002

TUNER UNIT (Bottom Side)

Figure 11


T.P.7
T.P.9
T.P.8
T.P.6
T.P.5
T.P.11
T.P.10

TUNER UNIT Main P.C. Board (Foil Side)

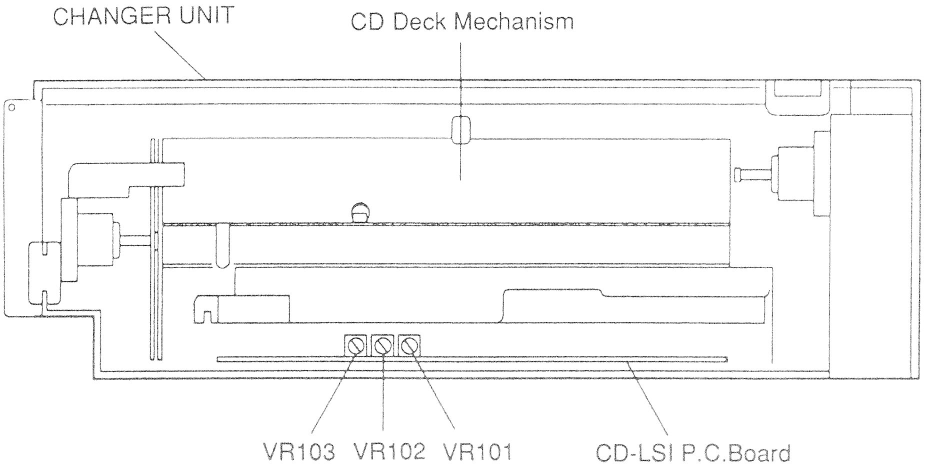
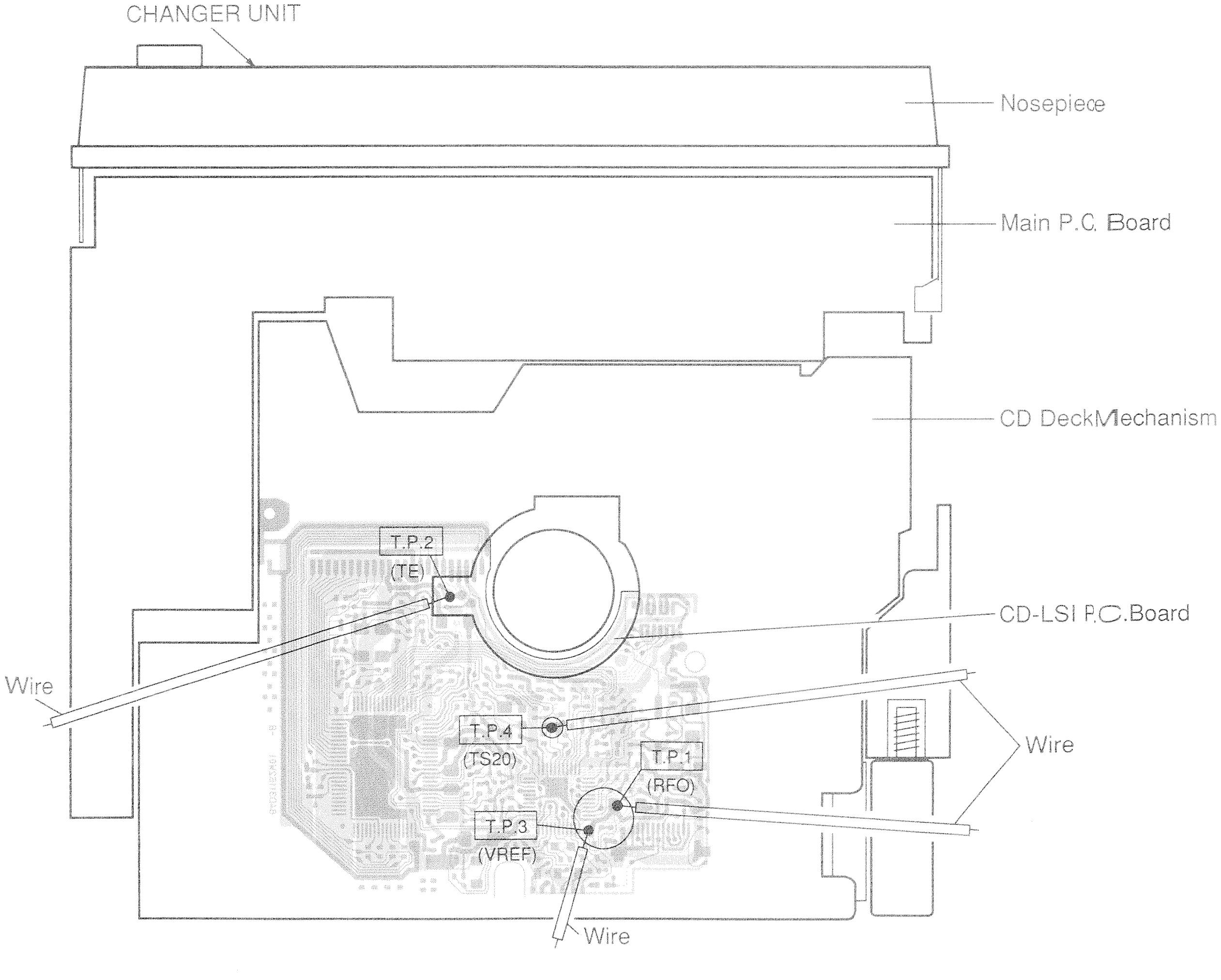

CHANGER UNIT
CD Deck Mechanism
VR103
VR102
VR101
CD-LSI P.C.Board

Figure 12


CHANGER UNIT
Nosepiece
Main P.C. Board
CD DeckMechanism
T.P.2
(TE)
CD-LSI P.C.Board
Wire
T.P.4
(TS20)
T.P.1
(RFO)
Wire
T.P.3
(VREF)
Wire

CHANGER UNIT CD-LSI P.C. Board (Component Side)

Figure 13

Note: After adjustment, securely remove the solder used to connect the wire.

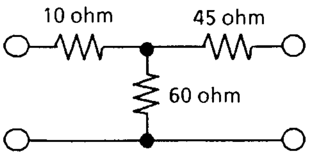
Electrical Inspection Specifications

1. Measuring Conditions

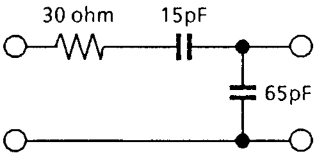
(1) Power Supply : DC14 ± 0.2V
(2) Load Impedance : Pre Out 10kohm
(3) Power Output : CD : 1.6V
FM : 500mV
MW / LW : 200mV
(4) Signal Generator Output : SG Indication
(5) Control Settings (Changer Unit)
Fader — Front Position
Balance — Center position
Treble — Center Position
Bass — Center Position
(6) Standard Modulations
(FM) Mono : 400Hz, 22.5kHz Deviation (MW / LW) 30% 400Hz
Stereo : 1kHz
Pilot : 8%

(7) Dummy Antenna

FM



MW / LW



2. FM Inspection

Step	Item		SG				Spec
			f (MHz)	Input(dB)	Mod.	ST.	
1	Usable Sensitivity		90.1	6	ON / OFF	OFF	S / N more than 30dB
			106.1	6	ON / OFF	OFF	S / N more than 30dB
2	Stop Level (DX)	To be not Stopped	98.1	9	ON	OFF	15 ± 5dB
		To be Stopped	98.1	20	ON	OFF	
	Stop Level (LOC)	To be not Stopped	98.1	34	ON	OFF	45 ± 10dB
		To be Stopped	98.1	55	ON	OFF	
3	Distortion		98.1	60	ON	OFF	less than 1%
4	Stereo Separation		98.1	60	ON	ON:1kHz Rch only	more than 25dB (IHF T-200)
5	Stereo Blend		98.1	31~37	ON	ON:1kHz Rch only	8dB
6	Hi-Cut		98.1	14	ON	ON 10kHz	0 to -9dB

Step	Item		SG				Spec
			ƒ (MHz)	Input(dB)	Mod.	ST.	
7	TONE Control	TREBLE	98.1	60	ON	OFF	MAX. +10±3dB
							MIN. -10±3dB
		BASS	98.1	60	ON	OFF	MAX. +15±4dB
							MIN. -15±4dB

3. MW Inspection

Step	Item		SG			Spec
			ƒ (kHz)	Input(dB)	Mod.	
1	Usable Sensitivity		999	34	ON/OFF	S/N more than 20dB
2	Stop Level (DX)	To be not Stopped	999	23	ON	34±10dB
		To be Stopped	999	44	ON	
	Stop Level (LOC)	To be not Stopped	999	41	ON	L/D 30±12dB
		To be Stopped	999	86	ON	
3	Distortion		999	74	ON	less than 2%
4	Level difference from FM level		999	74	ON	-8±3dB -2±3dB

4. LW Inspection

Step	Item		SG			Spec
			ƒ (kHz)	Input(dB)	Mod.	
1	Usable Sensitivity		216	41	ON/OFF	S/N more than 20dB
2	Stop Level (DX)	To be not Stopped	216	23	ON	34±10dB
		To be Stopped	216	44	ON	
	Stop Level (LOC)	To be not Stopped	216	41	ON	L/D 30±12dB
		To be Stopped	216	86	ON	
3	Distortion		216	74	ON	less than 2%

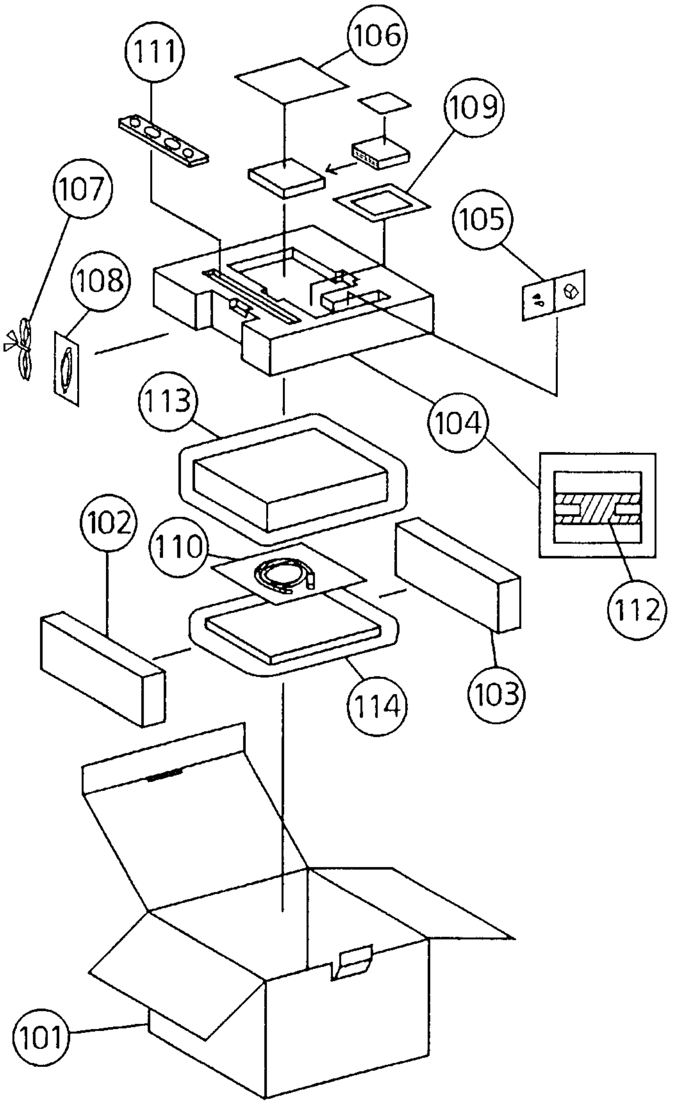
5. BACK UP CURRENT Inspection

Step	Item	Spec
1	Back Up Current Check (at ACC OFF)	less than 5mA

Packing Assembly Parts List

Symbol No.	Part No.	Description
101	56S41054W40	Carton, Packing (Individual)
102	56D41539W01	Tray, Packing Bottom (L)
103	56D41539W02	Tray, Packing Bottom (R)
104	56D41539W03	Tray, Packing Top
105	01V43800W74	Assy., Kit Installation
106	68P40870W68	Owner's, Manual
107	01T25023W01	Assy., DIN Cable
108	01T96095F06	Assy., Connector 4P
109-1	01T35404W04	Unit, Remocon
109-2	60T70585F01	Battery, Lit. 3V
110	01T16240W01	Assy., Antenna Cable
111	07B64552F01	Bracket, Strap Receiver
112	56A41541W01	Pad Packing
113	56C40990T36	Sack, Polyethylene
114	56C40990T22	Sack, Polyethylene

Packing Method View



MEMO

Changer Unit

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Exploded View (Changer Unit) ..... 57 to 58
Semi - Conductor Lead Identifications ..... 59 to 65

Disassembly Instruction

1. Removal of Nosepiece

(1) After removal of Top Cover, remove the Rotary Knob as shown in Figure 12.

(2) Remove five Hooks (A) as shown in Figures 12, 13.

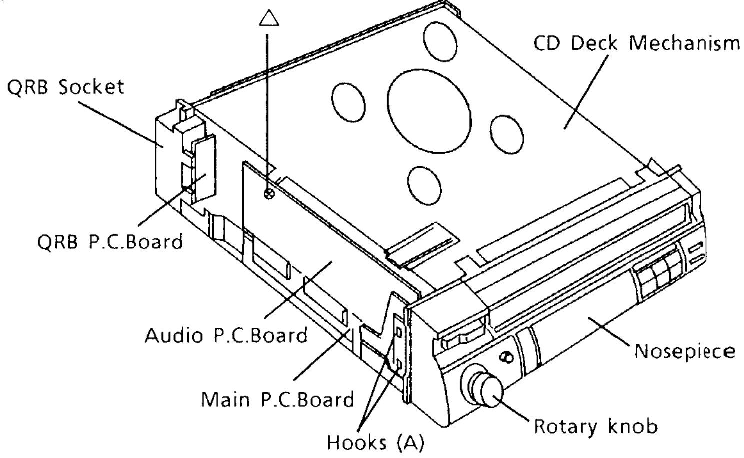

△
CD Deck Mechanism
QRB Socket
QRB P.C.Board
Audio P.C.Board
Nosepiece
Main P.C.Board
Rotary knob
Hooks (A)

Figure 12

2. Removal of Front P.C.Board

(1) After removal of Nosepiece, remove two Solder (a) and four Hooks (B) as shown in Figure 14.

(2) Disconnect the 16-Pins Connector to Main P.C.Board as shown in Figure 14.

Note) To make it easy, insert a thim stick object into an aperture and push out the Front P.C.Board as shown in Figure 15.

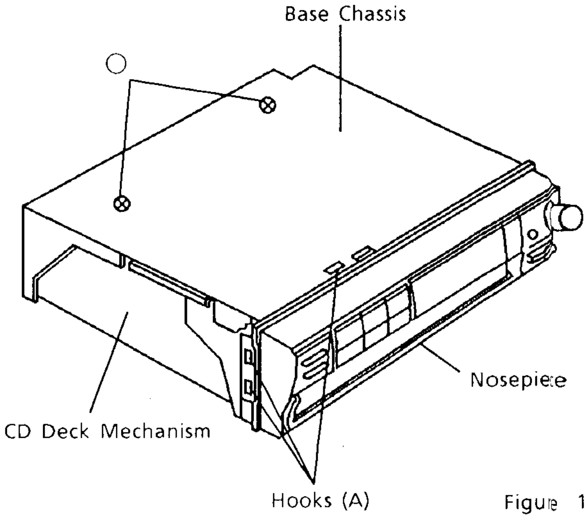

Base Chassis
○
Nosepiece
CD Deck Mechanism
Hooks (A)

Figure 13

3. Removal of QRB P.C.Board

(1) After removal of Front P.C.Board, remove two screws marked "□" as shown in Figure 16.

(2) Pull up QRB Socket to direction of the arrow as shown in Figure 16.

(3) QRB P.C.Board with QRB Socket can be removed completely.

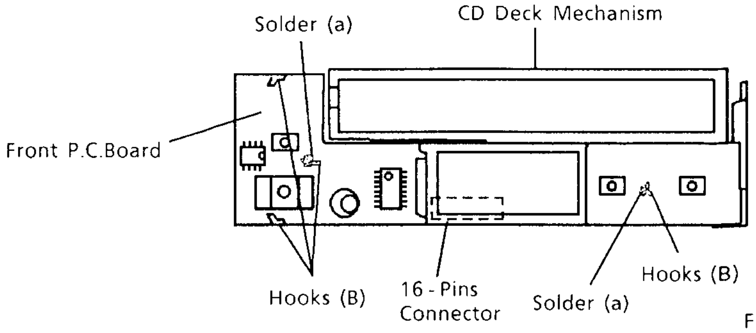

Solder (a)
CD Deck Mechanism
Front P.C.Board
Hooks (B)
16-Pins Connector
Solder (a)
Hooks (B)

Figure 14

4. Removal of CD Deck Mechanism

(1) After removal of QRB P.C.Board, remove two screws marked "○" and Base Chassis as shown in Figure 13.

(2) CD Deck Mechanism with Main P.C.Board, Audio P.C.Board and Front Chassis can be removed completely.

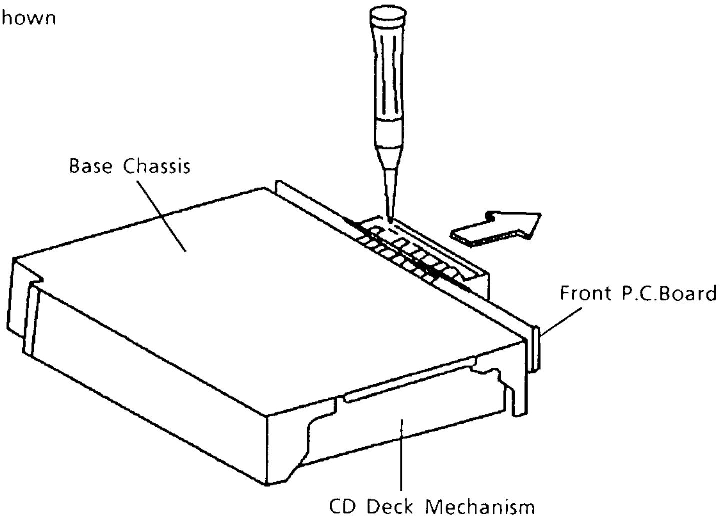

Base Chassis
Front P.C.Board
CD Deck Mechanism

Figure 15

5. Removal of Main P.C.Board

(1) After removal of CD Deck Mechanism, remove three screws marked "△" as shown in Figures 12, 17.

(2) Disconnect all Flexible P.C.Boards to Main P.C.Board.

(3) Main P.C.Board with Audio P.C.Board and Front Chassis can be removed completely.

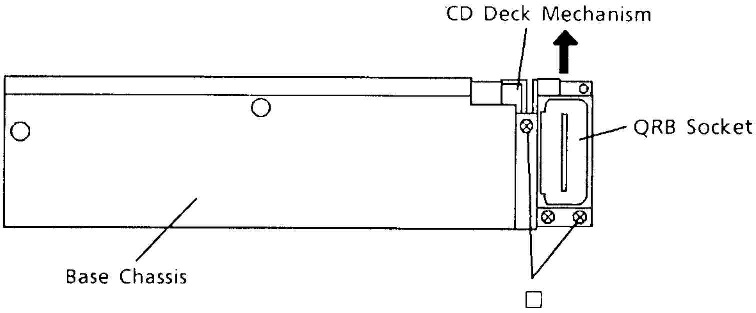

CD Deck Mechanism
QRB Socket
Base Chassis
□

Figure 16

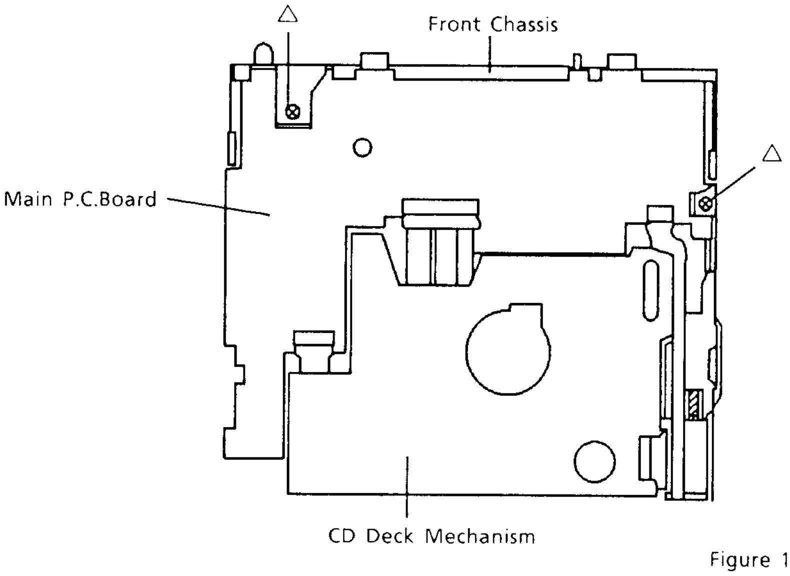

△
Front Chassis
△
Main P.C.Board
CD Deck Mechanism

Figure 17

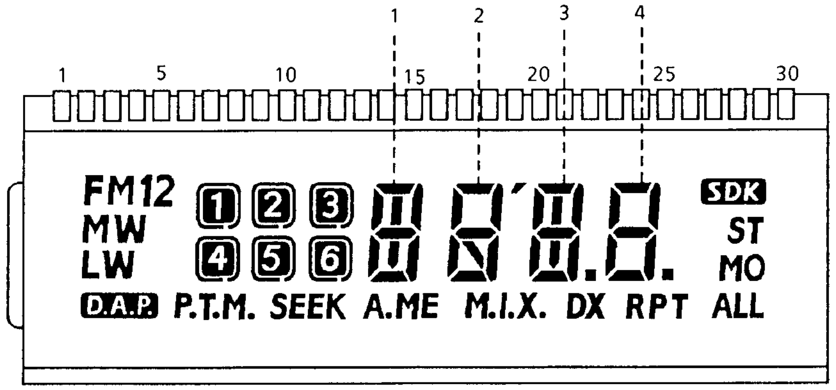
Description of IC Terminals

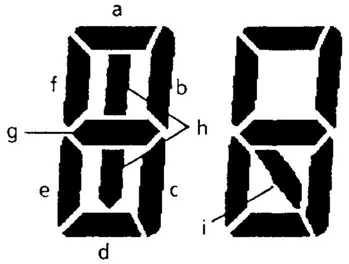
15590W70 (IC602)

No.	Symbol	I/O	Terminal Description
1	DISCNO	I	DISC POSITION Detector.
2	KEY-SI	I	SERIAL KEY Input.
3	LC-CLK	O	IC404 CLOCK Output.
4	LC-DATA	O	IC404 DATA Output.
5	LC-INH	O	LCD DISPLAY Signal of Prohibition Output.
6	LC-CE	O	IC404 CE Output.
7	RESET	I	SYSTEM RESET Input.
8	X1	—	SYSTEM CLOCK1 (4.19MHz)
9	X2	—	SYSTEM CLOCK2 (4.19MHz)
10	W-OUT	O	WATCH DOG Output.
11	KEY-S/P	O	SERIAL/PARALLEL Signal of SERIAL KEY Input Switching Output.
12	NC	—	N.C.
13	NC	—	N.C.
14	BUS-OUT	O	DATA BUS Output.
15	L-CONT	O	LOADING Regulator Control Output.
16	TRY-M (+)	O	TRAY MOTOR (+) Output.
17	TRY-M (-)	O	TRAY MOTOR (-) Output.
18	ELV-M (+)	O	ELEVATOR MOTOR (+) Output.
19	ELV-M (-)	O	ELEVATOR MOTOR (-) Output.
20	LOD-M (+)	O	LOADING MOTOR (+) Output.
21	LOD-M (-)	O	LOADING MOTOR (-) Output.
22	DS2	I	AREA SET UP SW2 Terminal.
23	DS1	I	AREA SET UP SW1 Terminal.
24	EJE-KEY	I	MAGAZINE EJECT KEY Signal Input.
25	ACC	I	ACC ON/OFF Detector.
26	Vss	—	GND.
27	B-HOLD	I	BATT ON/OFF Detector.
28	A-HOLD	I	STANDBY CANCELLER Signal.
29	BUS-IN	I	DATA BUS Input.
30	R/C-IN	I	REMOCON Input.
31	T-SENS	I	TEMPERATURE SENSOR Input.

No.	Symbol	I/O	Terminal Description
32	DISCP	I	DISC IN Detector Signal Input.
33	LODEND	I	LOADING END PHOT SW Signal Input.
34	DISCOK	I	GUILLOTINE DETECTOR PHOT SW Signal Input.
35	LOD-SW	I	LOADING ARM SW Signal Input.
36	LIM-SW	I	Inside Circumference Limit SW Signal Input.
37	NC	—	N.C.
38	P-CONT	O	Power On Output
39	NC	—	N.C.
40	EEP-CE	O	EEPROM CE Output.
41	EEP-SI	I	EEPROM DATA Input.
42	EEP-SO	O	EEPROM DATA Output.
43	EEP-SCK	O	EEPROM CLOCK Output.
44	GND	—	GND.
45	$\overline{\text{HMP-SW}}$	I	HOME POSITION SW Signal Input.
46	MAG-SW	I	MAGAZINE DETECT SW Signal Input.
47	$\overline{\text{TRY-OUT}}$	I	TRAY OUT SW Signal Input.
48	$\overline{\text{TRY-IN}}$	I	TRAY IN SW Signal Input.
49	EEP-CLK	O	EEPROM CLOCK Output.
50	NC	—	N.C.
51	FCONT	O	FOCUS GAIN Control Output.
52	AMUTE	O	AUDIO MUTE Output.
53	TC-BUS3	I/O	IC101 BUS DATA3 Input/Output.
54	TC-BUS2	I/O	IC101 BUS DATA2 Input/Output.
55	TC-BUS1	I/O	IC101 BUS DATA1 Input/Output.
56	TC-BUS0	I/O	IC101 BUS DATA0 Input/Output.
57	V_{PP}	—	PROM DATA Input Regulator.
58	V_{DD}	—	Power Supply Terminal. (+5V)
59	TC-LOCK	I	IC101 LOCK Signal Input.
60	TC-BUCK	O	IC101 BUS CLOCK Signal Output.
61	TC-CCE	O	IC101 CE Signal Output.
62	TC-RST	O	IC101 RESET Signal Output.
63	ENC-1	I	ENCODER Input 1.
64	ENC-0	I	ENCODER Input 0.

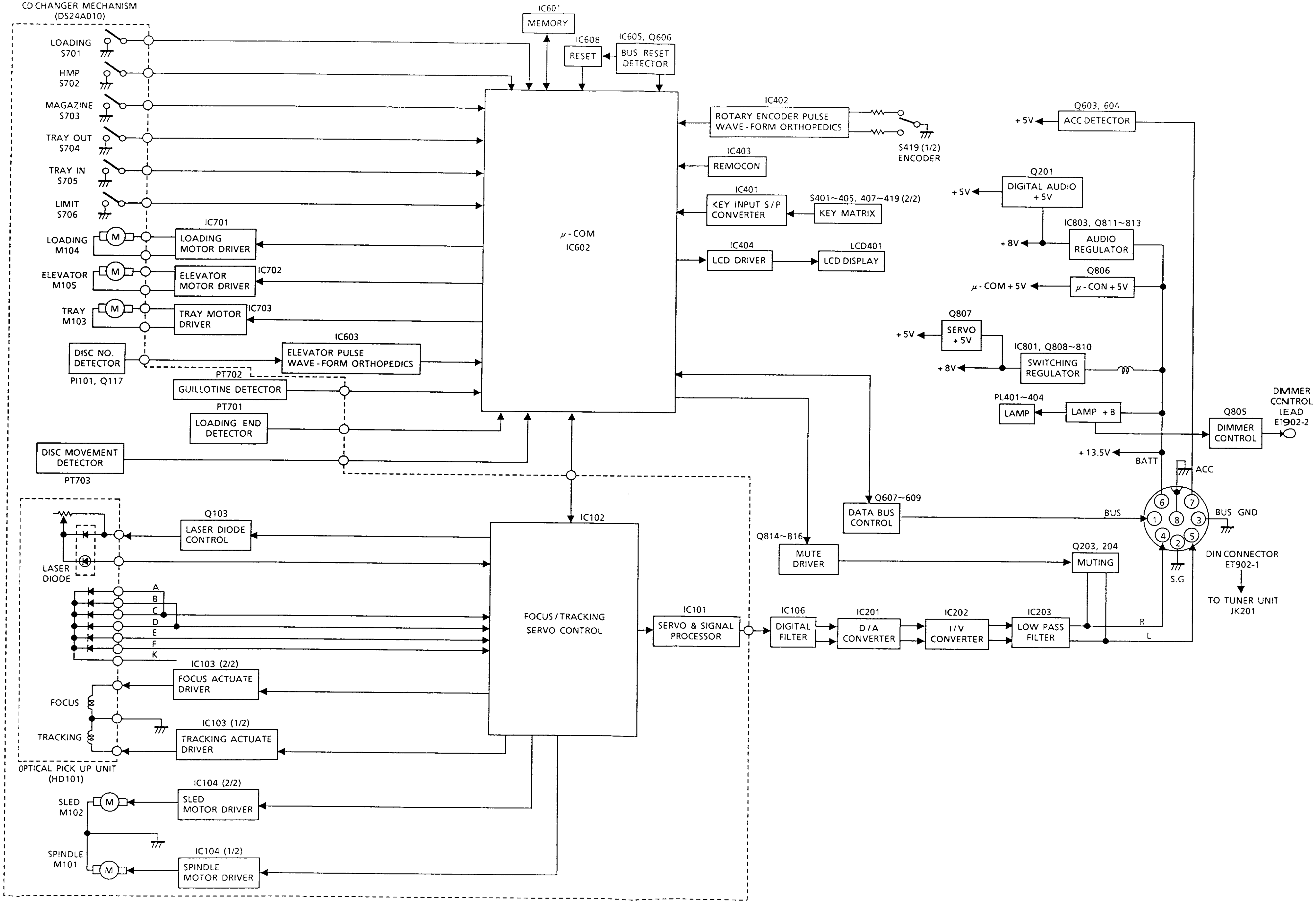
LCD Display





No.	COM. 1	COM. 2	No.	COM. 1	COM. 2
1	COM. 1	—	16	2g	2f
2	—	COM. 2	17	2a	2b
3	FM d.p 3	D.A.P	18	2d	2c
4	1	2	19	M.I.X	′
5	LW	MW	20	3h	3e
6	□□□ □□□	P.T.M	21	3g	3f
7	❹	❶	22	3a	3b
8	❺	❷	23	3d	3c
9	❻	❸	24	DX	4e
10	1h	1e	25	4g	4f
11	1g	1f	26	4a	4b
12	1a	1b	27	4d	4c
13	1d	1c	28	RPT	d.p 4
14	A.ME	SEEK	29	MO	SDK
15	2i	2e	30	ALL	ST

Block Diagram


CD CHANGER MECHANISM
(DS24A010)
LOADING
S701
HMP
S702
MAGAZINE
S703
TRAY OUT
S704
TRAY IN
S705
LIMIT
S706
LOADING
M104
ELEVATOR
M105
TRAY
M103
M
IC701
LOADING
MOTOR DRIVER
IC702
ELEVATOR
MOTOR DRIVER
IC703
TRAY MOTOR
DRIVER
DISC NO.
DETECTOR
PI101, Q117
IC603
ELEVATOR PULSE
WAVE-FORM ORTHOPEDICS
PT702
GUILLOTINE DETECTOR
PT701
LOADING END
DETECTOR
DISC MOVEMENT
DETECTOR
PT703
IC601
MEMORY
IC608
RESET
IC605, Q606
BUS RESET
DETECTOR
μ-COM
IC602
IC402
ROTARY ENCODER PULSE
WAVE-FORM ORTHOPEDICS
S419 (1/2)
ENCODER
IC403
REMOCON
IC401
KEY INPUT S/P
CONVERTER
S401~405, 407~419 (2/2)
KEY MATRIX
IC404
LCD DRIVER
LCD401
LCD DISPLAY
Q603, 604
+5V
ACC DETECTOR
Q201
DIGITAL AUDIO
+5V
IC803, Q811~813
+8V
AUDIO
REGULATOR
Q806
μ-COM+5V
μ-CON+5V
Q807
SERVO
+5V
IC801, Q808~810
SWITCHING
REGULATOR
PL401~404
LAMP
LAMP +B
Q805
DIMMER
CONTROL
DIMMER
CONTROL
LEAD
ET902-2
+13.5V
BATT
ACC
Q607~609
DATA BUS
CONTROL
BUS
BUS GND
S.G
DIN CONNECTOR
ET902-1
TO TUNER UNIT
JK201
Q814~816
MUTE
DRIVER
Q203, 204
MUTING
R
L
IC102
FOCUS/TRACKING
SERVO CONTROL
IC101
SERVO & SIGNAL
PROCESSOR
IC106
DIGITAL
FILTER
IC201
D/A
CONVERTER
IC202
I/V
CONVERTER
IC203
LOW PASS
FILTER
Q103
LASER DIODE
CONTROL
LASER
DIODE
A
B
C
D
E
F
K
IC103 (2/2)
FOCUS ACTUATE
DRIVER
FOCUS
TRACKING
IC103 (1/2)
TRACKING ACTUATE
DRIVER
OPTICAL PICK UP UNIT
(HD101)
SLED
M102
IC104 (2/2)
SLED
MOTOR DRIVER
SPINDLE
M101
IC104 (1/2)
SPINDLE
MOTOR DRIVER
1
2
3
4
5
6
7
8

Parts Layout on P.C. Boards and Wiring Diagram (1/2)

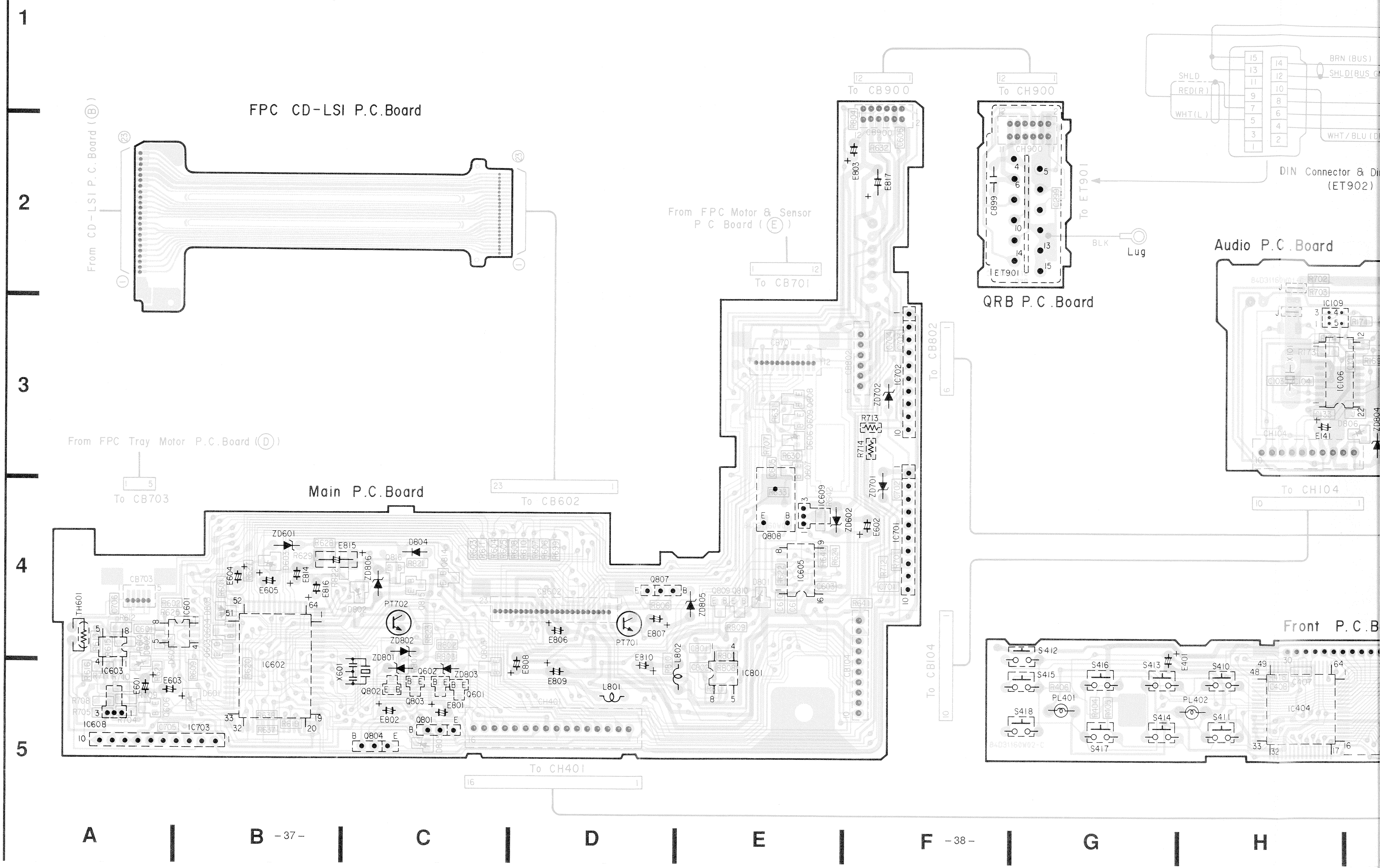
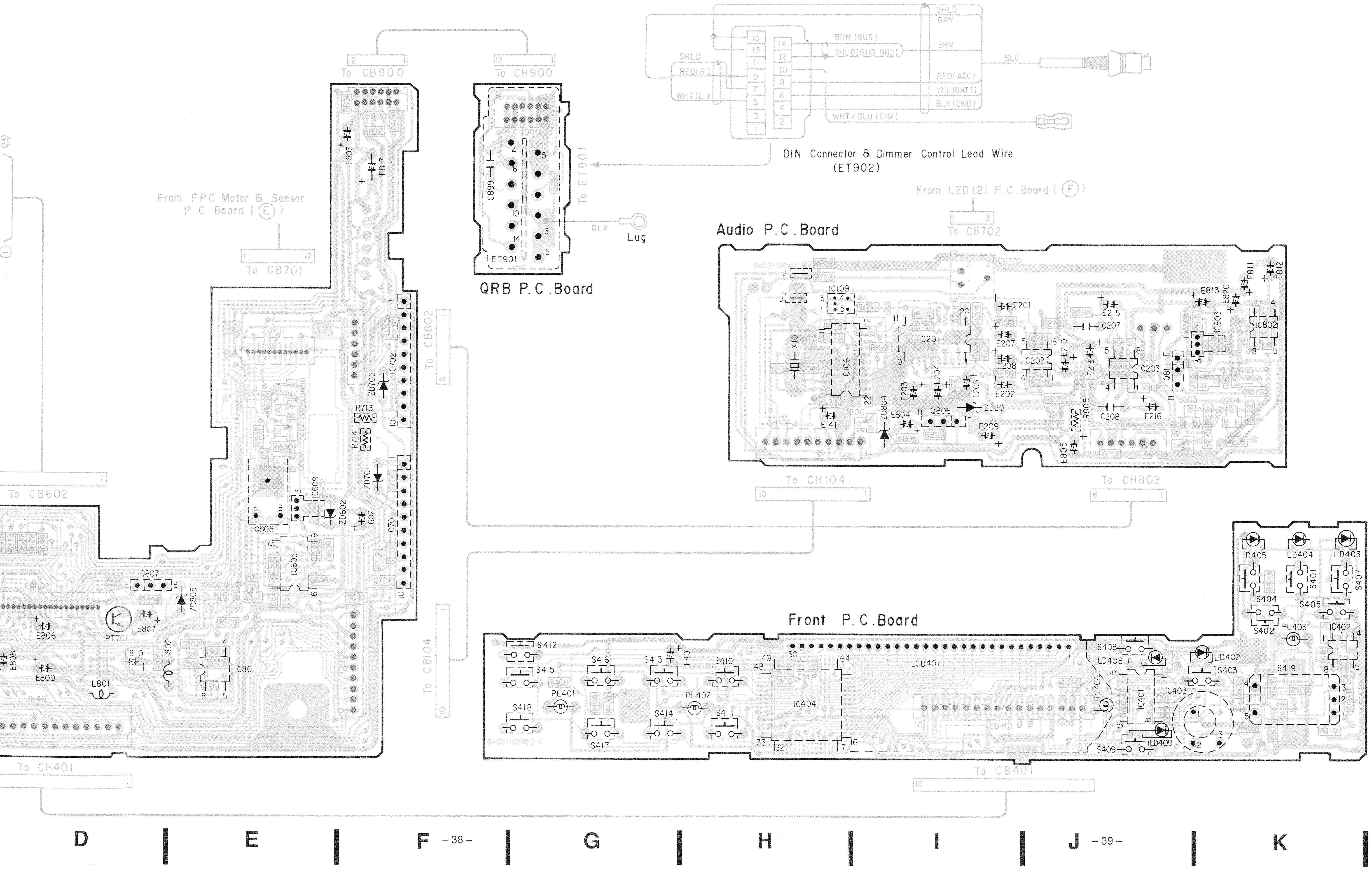

1
2
3
4
5
FPC CD-LSI P.C.Board
From CD-LSI P.C. Board (B)
23
1
From FPC Motor & Sensor P.C. Board (E)
To CB701
To CB900
To CH900
QRB P.C.Board
CB900
CH900
ET901
C899
To ET901
BLK
Lug
DIN Connector & Di
(ET902)
BRN (BUS)
SHLD(BUS G
SHLD
RED(R)
WHT(L)
WHT/BLU (D
Audio P.C.Board
IC109
IC106
X101
E141
D806
ZD804
To CH104
From FPC Tray Motor P.C.Board (D)
To CB703
Main P.C.Board
To CB602
To CB802
To CB104
To CH401
CB703
CB602
CB701
CB802
CB104
CH401
TH601
IC603
IC608
IC601
IC602
IC703
IC605
IC609
IC701
IC702
IC801
ZD601
ZD602
ZD701
ZD702
ZD801
ZD802
ZD803
ZD805
ZD806
D804
PT701
PT702
X601
Q602
Q801
Q802
Q803
Q804
Q807
Q808
Q601
L801
L802
R713
R714
E601
E602
E603
E604
E605
E801
E802
E803
E806
E807
E808
E809
E810
E814
E815
E816
E817
Front P.C.B
S410
S411
S412
S413
S414
S415
S416
S417
S418
PL401
PL402
IC404
E401
A
B
C
D
E
F
G
H

Diagram (1/2)

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern


DIN Connector & Dimmer Control Lead Wire
(ET902)
SHLD
GRY
BRN (BUS)
SHLD (BUS GND)
BRN
BLU
SHLD
RED (R)
WHT (L)
RED (ACC)
YEL (BATT)
BLK (GND)
WHT / BLU (DIM)
To CB900
To CH900
CB900
CH900
ET901
To ET901
BLK
Lug
QRB P.C.Board
From FPC Motor & Sensor P.C Board (E)
To CB701
To CB602
To CB802
To CB104
To CH401
From LED (2) P.C.Board (F)
To CB702
Audio P.C.Board
IC109
IC106
IC201
IC202
IC203
IC802
IC803
X101
Q806
ZD201
ZD804
To CH104
To CH802
IC609
IC605
IC702
IC701
IC801
ZD702
ZD701
ZD602
ZD805
Q807
Q808
PT701
L801
L802
Front P.C.Board
LCD401
IC404
IC401
IC403
IC402
S412
S415
S416
S413
S410
S418
S417
S414
S411
S408
S409
S403
S419
S402
S404
S405
S401
S407
PL401
PL402
PL403
PL404
LD402
LD403
LD404
LD405
LD408
LD409
To CB401
D
E
F
G
H
I
J
K

Parts Layout on P.C. Boards and Wiring Diagram (2/2) All P.C. Boards viewed from soldered side.

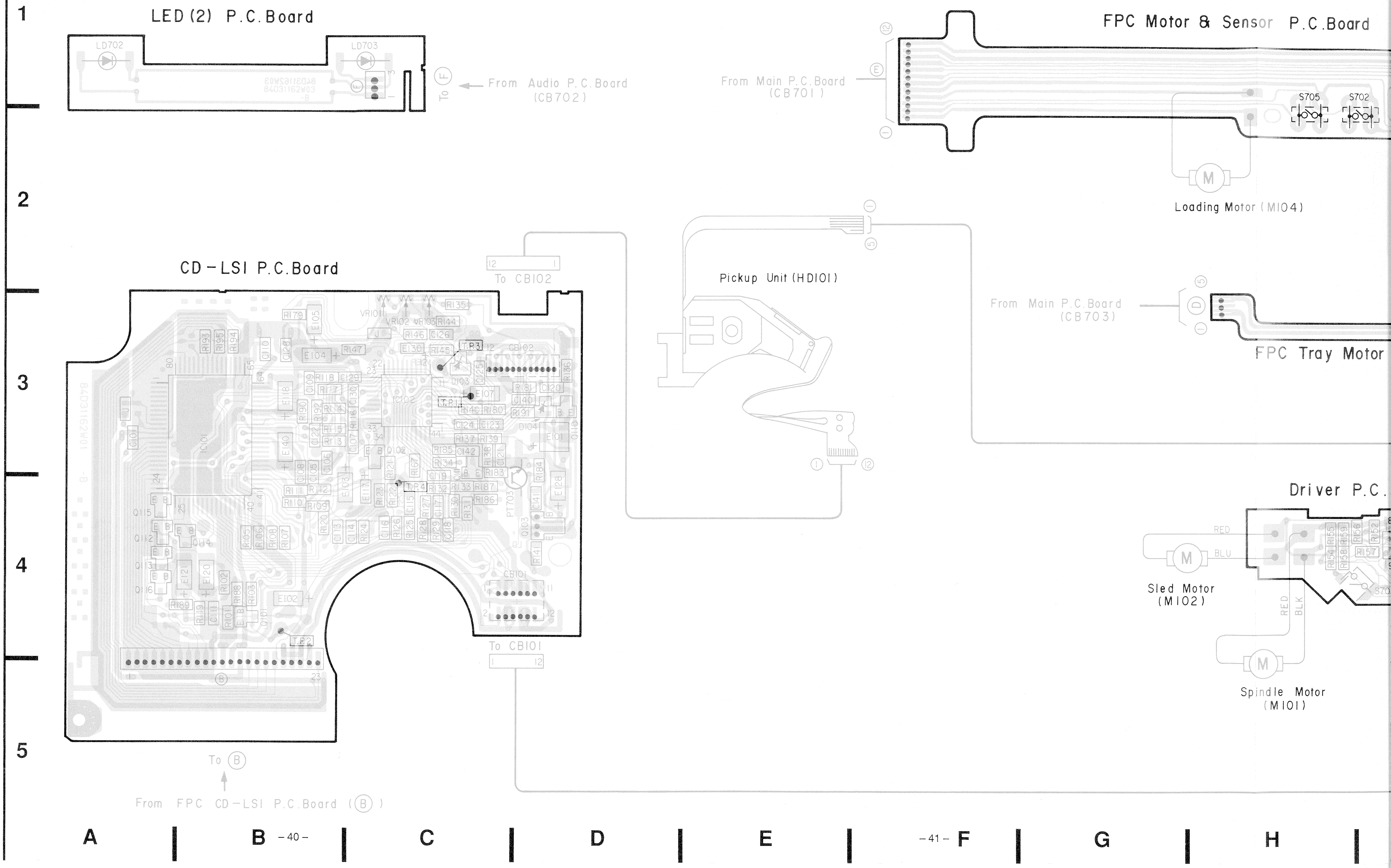
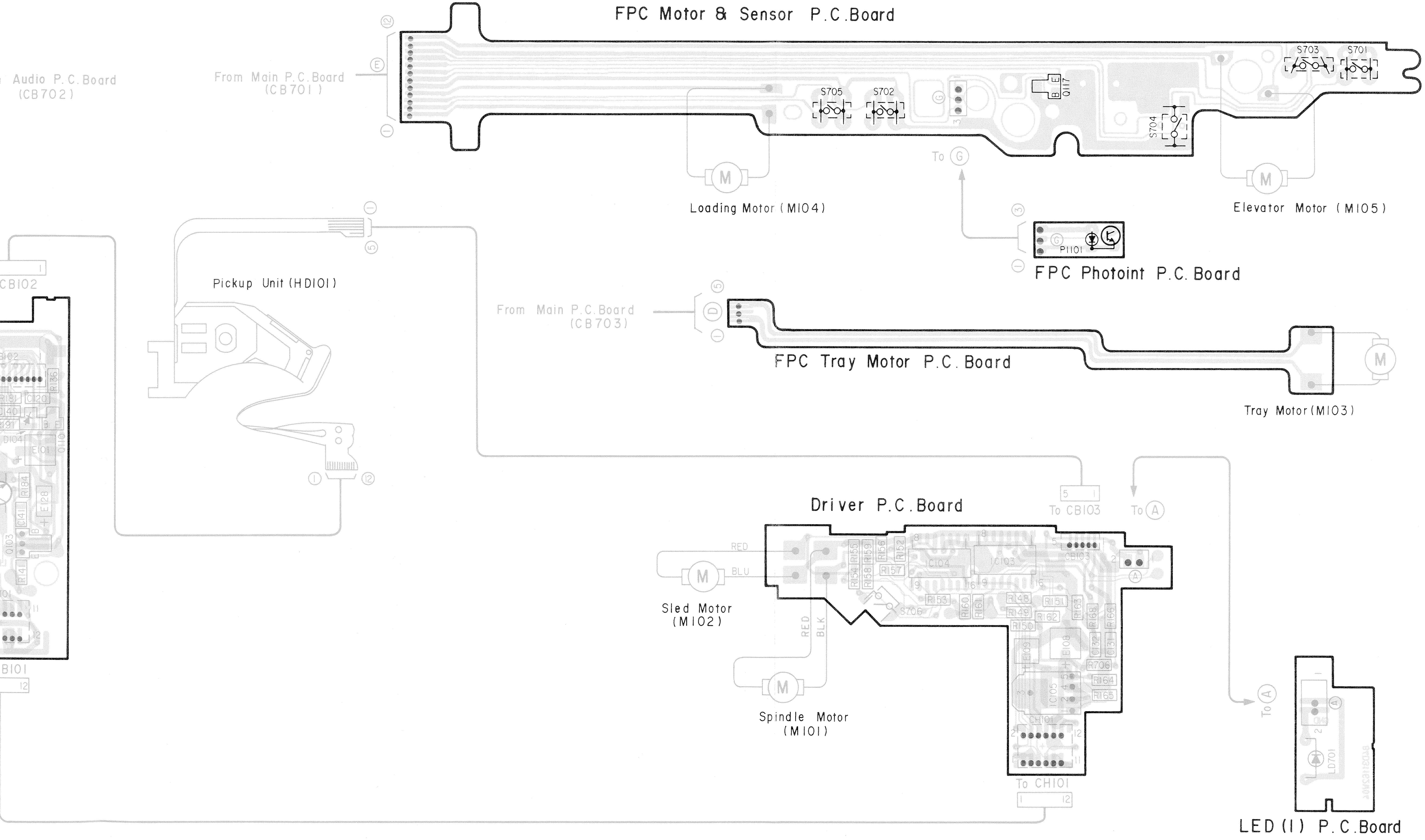

LED (2) P.C.Board
LD702
LD703
To Ⓕ
From Audio P.C.Board (CB702)
FPC Motor & Sensor P.C.Board
From Main P.C.Board (CB701)
Ⓔ
S705
S702
Loading Motor (M104)
Pickup Unit (HD101)
CD-LSI P.C.Board
To CB102
To CB101
From Main P.C.Board (CB703)
Ⓓ
FPC Tray Motor
Driver P.C.
RED
BLU
BLK
Sled Motor (M102)
Spindle Motor (M101)
To Ⓑ
From FPC CD-LSI P.C.Board (Ⓑ)
IC101
IC102
CB101
CB102
T.P.1
T.P.2
T.P.3
T.P.4
1
2
3
4
5
A
B
C
D
E
F
G
H

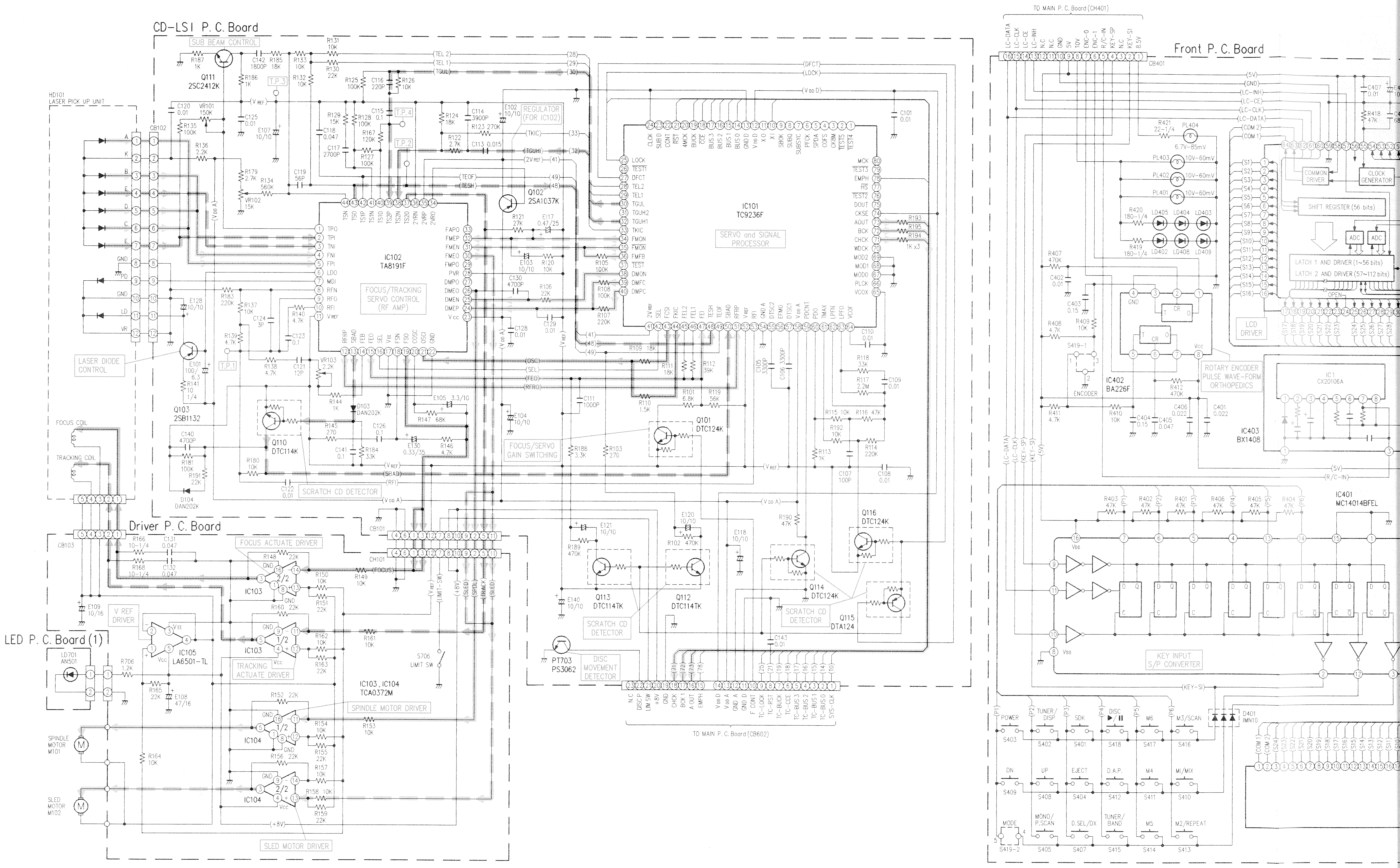
Diagram (2/2) All P.C. Boards viewed from soldered side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

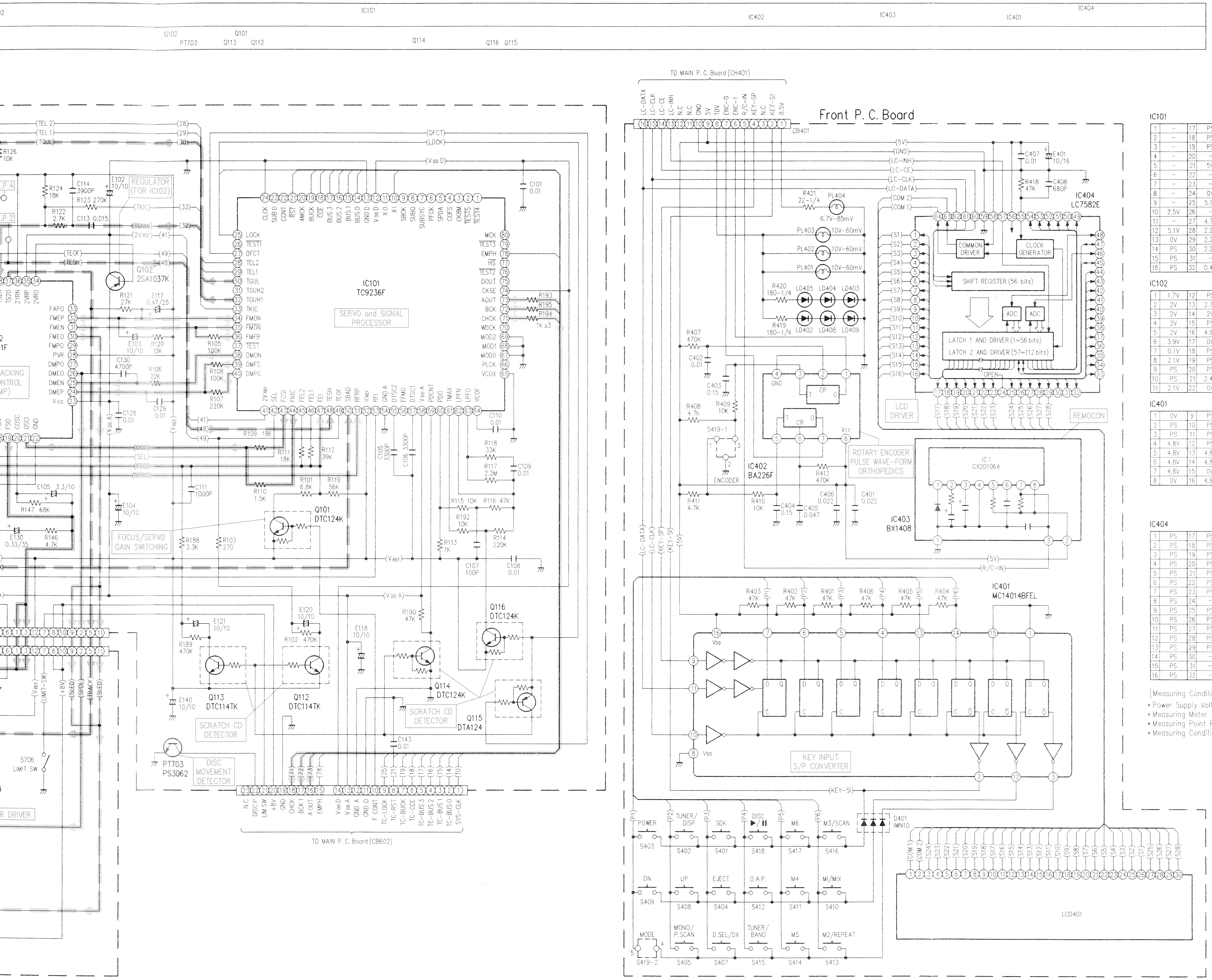

FPC Motor & Sensor P.C.Board
Audio P.C.Board (CB702)
From Main P.C.Board (CB701)
E
12
1
S705
S702
S703
S701
S704
Q117
G
To G
Loading Motor (M104)
Elevator Motor (M105)
M
3
P1101
FPC Photoint P.C. Board
Pickup Unit (HD101)
5
CB102
From Main P.C.Board (CB703)
D
FPC Tray Motor P.C. Board
Tray Motor (M103)
Driver P.C.Board
To CB103
To A
RED
BLU
BLK
Sled Motor (M102)
Spindle Motor (M101)
IC104
IC103
IC105
CB103
CH101
S706
To CH101
To A
LD701
LED (1) P.C.Board
CB101

Schematic Diagram (1/2)

IC	IC105	IC103 IC104	IC102	IC101	IC402	IC403	IC401
Transistor (Q)	Q111 Q103	Q110	Q102 PT703	Q101 Q113 Q112 Q114	Q116 Q115		



1
2
3
4
5
A
B
C
D
E
F
G
H
CD-LSI P. C. Board
Driver P. C. Board
LED P. C. Board (1)
Front P. C. Board
TO MAIN P. C. Board (CH401)
TO MAIN P. C. Board (CB602)
HD101 LASER PICK UP UNIT
SUB BEAM CONTROL
Q111 2SC2412K
LASER DIODE CONTROL
Q103 2SB1132
FOCUS COIL
TRACKING COIL
IC102 TA8191F
FOCUS/TRACKING SERVO CONTROL (RF AMP)
REGULATOR (FOR IC102)
Q102 2SA1037K
IC101 TC9236F
SERVO and SIGNAL PROCESSOR
Q110 DTC114K
D103 DAN202K
D104 DAN202K
SCRATCH CD DETECTOR
FOCUS/SERVO GAIN SWITCHING
Q101 DTC124K
Q113 DTC114TK
Q112 DTC114TK
Q114 DTC124K
Q115 DTA124
Q116 DTC124K
PT703 PS3062
DISC MOVEMENT DETECTOR
FOCUS ACTUATE DRIVER
TRACKING ACTUATE DRIVER
SPINDLE MOTOR DRIVER
SLED MOTOR DRIVER
V REF DRIVER
IC105 LA6501-TL
IC103, IC104 TCA0372M
S706 LIMIT SW
LD701 AN501
SPINDLE MOTOR M101
SLED MOTOR M102
T.P.1
T.P.2
T.P.3
T.P.4
CB101
CB102
CB103
CH101
CB401
PL401
PL402
PL403
PL404
COMMON DRIVER
CLOCK GENERATOR
SHIFT REGISTER (56 bits)
LATCH 1 AND DRIVER (1~56 bits)
LATCH 2 AND DRIVER (57~112 bits)
LCD DRIVER
ROTARY ENCODER PULSE WAVE-FORM ORTHOPEDICS
IC402 BA226F
IC403 BX1408
IC1 CX20106A
IC401 MC14014BFEL
KEY INPUT S/P CONVERTER
D401 IMN10
ENCODER
POWER
TUNER/DISP
SDK
DISC ▶/II
M6
M3/SCAN
DN
UP
EJECT
D.A.P.
M4
MI/MIX
MODE
MONO/P.SCAN
D.SEL/DX
TUNER/BAND
M5
M2/REPEAT


IC101
IC402
IC403
IC401
IC404
Q102
Q101
PT703
Q113
Q112
Q114
Q116
Q115
TO MAIN P. C. Board (CH401)
Front P. C. Board
CB401
LC-DATA
LC-CLK
LC-CE
LC-INH
N.C
GND
5V
10V
ENC-0
ENC-1
R/C-IN
KEY-SP
KEY-SI
8.5V
IC101
TC9236F
SERVO and SIGNAL PROCESSOR
REGULATOR (FOR IC102)
Q102
2SA1037K
Q101
DTC124K
FOCUS/SERVO GAIN SWITCHING
Q113
DTC114TK
Q112
DTC114TK
SCRATCH CD DETECTOR
Q114
DTC124K
Q115
DTA124
Q116
DTC124K
PT703
PS3062
DISC MOVEMENT DETECTOR
S706
LIMIT SW
TO MAIN P. C. Board (CB602)
PL404
PL403
PL402
PL401
6.7V-85mV
10V-60mV
LD405
LD404
LD403
LD402
LD408
LD409
IC402
BA226F
ROTARY ENCODER PULSE WAVE-FORM ORTHOPEDICS
ENCODER
IC404
LC7582E
COMMON DRIVER
CLOCK GENERATOR
SHIFT REGISTER (56 bits)
ADC
LATCH 1 AND DRIVER (1~56 bits)
LATCH 2 AND DRIVER (57~112 bits)
OPEN
LCD DRIVER
REMOCON
IC1
CX20106A
IC403
BX1408
IC401
MC14014BFEL
KEY INPUT S/P CONVERTER
D401
IMN10
POWER
S403
TUNER/DISP
S402
SDK
S401
DISC ▶/II
S418
M6
S417
M3/SCAN
S416
DN
S409
UP
S408
EJECT
S404
D.A.P.
S412
M4
S411
M1/MIX
S410
MODE
S419-2
MONO/P.SCAN
S405
D.SEL/DX
S407
TUNER/BAND
S415
M5
S414
M2/REPEAT
S413
LCD401

IC101

1	–	17	PS	33	1.7V	49	2.2V	65	0V
2	–	18	PS	34	2.2V	50	2.5V	66	–
3	–	19	PS	35	2.2V	51	2.4V	67	0.1V
4	–	20	–	36	2.1V	52	2.2V	68	0.1V
5	–	21	5V	37	–	53	PS	69	0.1V
6	–	22	–	38	2.2V	54	0.1V	70	–
7	–	23	–	39	PS	55	2.6V	71	PS
8	–	24	0V	40	PS	56	2.6V	72	PS
9	–	25	5.1V	41	4.3V	57	5.6V	73	PS
10	2.5V	26	–	42	5.1V	58	5.1V	74	5.1V
11	–	27	4.7V	43	2.6V	59	PS	75	–
12	5.1V	28	2.2V	44	2.6V	60	PS	76	–
13	0V	29	2.2V	45	2.2V	61	PS	77	–
14	PS	30	2.2V	46	2.2V	62	2.3V	78	0V
15	PS	31	–	47	2.2V	63	2.5V	79	–
16	PS	32	0.4V	48	2.2V	64	1.6V	80	–

IC105

1	2.6V
2	4V
3	0V
4	4V
5	8.5V

IC402

1	0V
2	0V
3	PS
4	0V
5	PS
6	0V
7	0V
8	4.8V

IC102

1	1.7V	12	PS	23	5V	34	4.4V
2	2V	13	2.7V	24	PS	35	0V
3	2V	14	2V	25	2.1V	36	2.1V
4	2V	15	PS	26	PS	37	PS
5	2V	16	4.9V	27	–	38	2V
6	3.9V	17	0V	28	2.1V	39	2V
7	0.1V	18	PS	29	–	40	PS
8	2.1V	19	PS	30	2V	41	2V
9	PS	20	PS	31	–	42	2.1V
10	PS	21	2.4V	32	2.1V	43	2.1V
11	2.1V	22	0V	33	–	44	2.1V

IC103 , 104

1	0V	9	0V
2	0V	10	0V
3	4V	11	2.6V
4	8.5V	12	2.6V
5	3.5V	13	2.6V
6	0V	14	2.6V
7	0V	15	0V
8	0V	16	0V

IC401

1	0V	9	PS
2	PS	10	PS
3	PS	11	PS
4	4.8V	12	PS
5	4.8V	13	4.8V
6	4.8V	14	4.8V
7	4.8V	15	0V
8	0V	16	4.8V

	E	C	B
Q101	0V	0V	0V
Q102	0V	0V	0V
Q103	0V	0.1V	0V
Q110	0V	0V	0V
Q111	0V	0V	0V
Q112	0V	0V	−0.4V
Q113	0V	0V	0.1V
Q114	0.1V	PS	0V
Q115	0V	0V	0V
Q116	0V	PS	5.1V

IC404

1	PS	17	PS	33	–	49	–
2	PS	18	PS	34	–	50	–
3	PS	19	PS	35	–	51	–
4	PS	20	PS	36	–	52	–
5	PS	21	PS	37	–	53	–
6	PS	22	PS	38	–	54	–
7	PS	23	PS	39	–	55	PS
8	PS	24	–	40	–	56	5V
9	PS	25	PS	41	–	57	PS
10	PS	26	PS	42	–	58	5V
11	PS	27	PS	43	–	59	0V
12	PS	28	PS	44	–	60	PS
13	PS	29	PS	45	–	61	PS
14	PS	30	–	46	–	62	PS
15	PS	31	–	47	–	63	PS
16	PS	32	–	48	–	64	PS

IC403

1	0V
2	4.8V
3	PS

[Measuring Conditions]

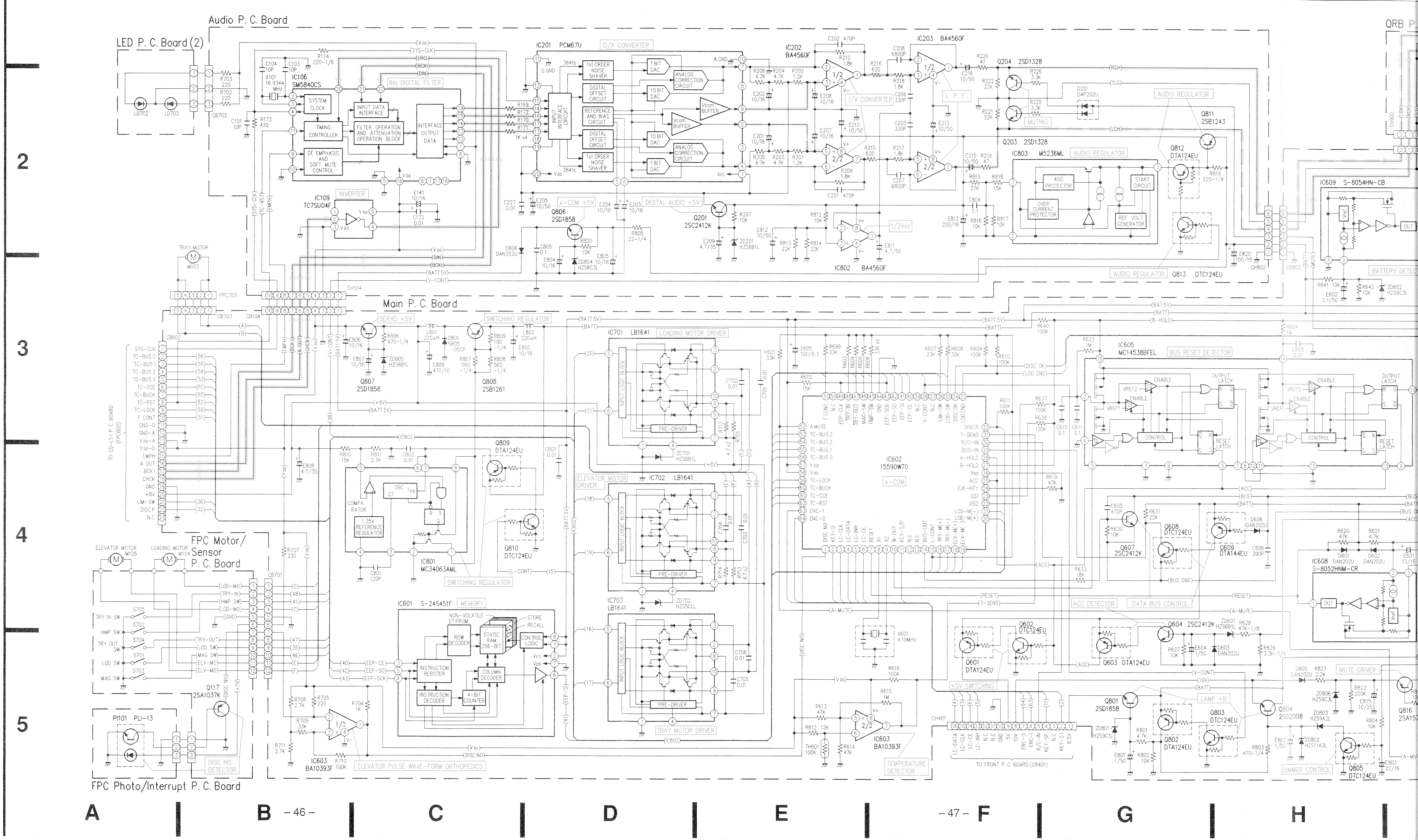
- * Power Supply Voltage : D C 14V
- * Measuring Meter : Digital Multi Voltmeter
- * Measuring Point Reference : Between Ground
- * Measuring Conditions : Be playing back the 2nd Music of the test CD (YEDS-18)

▨ CD Signal Line (Digital)
▨ Focus Servo Signal Line
▨ ▨ Tracking Servo Signal Line
▨ Spindle Servo Signal Line
▨ ▨ Sled Servo Signal Line

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

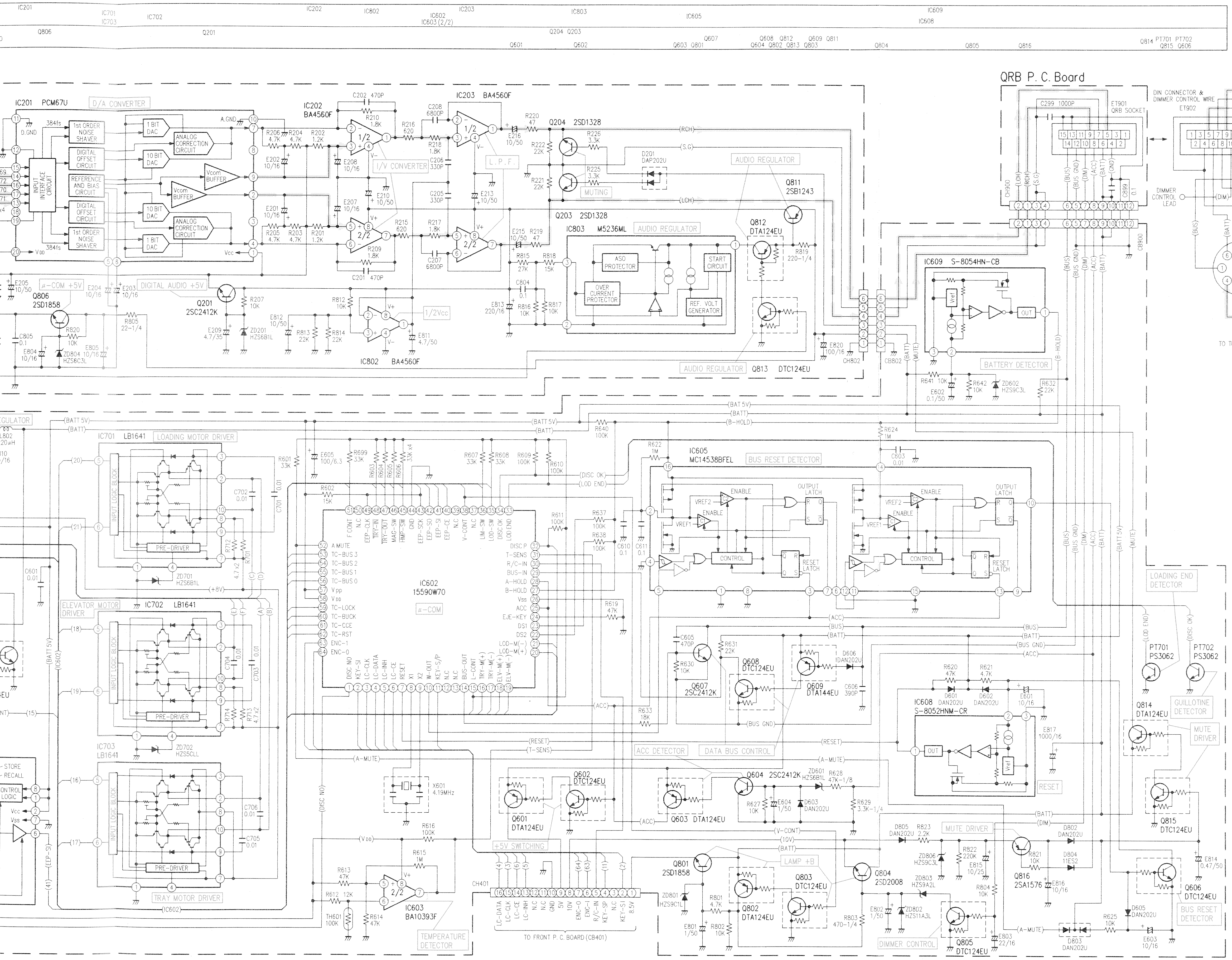
Schematic Diagram (2/2)

IC	IC106 IC109 IC503(1/2) IC601 IC801 IC201 IC701 IC703 IC702 IC202 IC802 IC602 IC603(2/2) IC203 IC803 IC605 IC609 IC608
Transistor (Q, PT, PI)	PI101 Q117 Q807 Q808 Q809 Q810 Q806 Q201 Q601 Q204 Q203 Q602 Q603 Q801 Q607 Q608 Q604 Q812 Q802 Q813 Q609 Q811 Q803 Q804 Q805 Q816



1
2
3
4
5
Audio P. C. Board
LED P. C. Board (2)
LD702
LD703
CB702
IC106 SM5840CS
X101 16.9344 MHz
SYSTEM CLOCK
TIMING CONTROLLER
INPUT DATA INTERFACE
FILTER OPERATION AND ATTENUATION OPERATION BLOCK
INTERFACE OUTPUT DATA
DE EMPHASIS AND SOFT MUTE CONTROL
8fs DIGITAL FILTER
IC109 TC7SU04F
INVERTER
IC201 PCM67U
D/A CONVERTER
1st ORDER NOISE SHAVER
DIGITAL OFFSET CIRCUIT
REFERENCE AND BIAS CIRCUIT
1 BIT DAC
10 BIT DAC
ANALOG CORRECTION CIRCUIT
Vcom BUFFER
INPUT INTERFACE CIRCUIT
IC202 BA4560F
I/V CONVERTER
IC203 BA4560F
L.P.F.
Q204 2SD1328
Q203 2SD1328
MUTING
D201 DAP202U
AUDIO REGULATOR
Q811 2SB1243
Q812 DTA124EU
IC803 M5236ML
ASO PROTECTOR
OVER CURRENT PROTECTOR
START CIRCUIT
REF. VOLT GENERATOR
Q813 DTC124EU
IC802 BA4560F
1/2Vcc
Q201 2SC2412K
DIGITAL AUDIO +5V
Q806 2SD1858
μ-COM +5V
D806 DAN202U
ZD804 HZS6C3L
ZD201 HZS6B1L
IC609 S-8054HN-CB
BATTERY DETEC
QRB P
CH802
CB802
TRAY MOTOR M103
FPC703
CB703
CB104
CH104
CB602
Main P. C. Board
SERVO +5V
Q807 2SD1858
ZD805 HZS6B1L
SWITCHING REGULATOR
Q808 2SB1261
TO CD-LS1 P. C. BOARD (FPC602)
IC701 LB1641
LOADING MOTOR DRIVER
INPUT LOGIC BLOCK
PRE-DRIVER
ZD701 HZS6B1L
IC702 LB1641
ELEVATOR MOTOR DRIVER
ZD702 HZS5C1L
IC703 LB1641
TRAY MOTOR DRIVER
IC801 MC34063AML
COMPARATOR
1.25V REFERENCE REGULATOR
OSC
Q809 DTA124EU
Q810 DTC124EU
IC601 S-24S451F
MEMORY
NON-VOLATILE E² PROM
STATIC RAM 256-BIT
STORE RECALL
ROW DECODER
CONTROL LOGIC
INSTRUCTION RESISTER
INSTRUCTION DECODER
COLUMN DECODER
4-BIT COUNTER
IC603 BA10393F
ELEVATOR PULSE WAVE-FORM ORTHOPEDICS
ELEVATOR MOTOR M105
LOADING MOTOR M104
FPC Motor/Sensor P. C. Board
CB701
TRY IN SW S705
HMP SW S702
TRY OUT SW S704
LOD SW S701
MAG SW S703
Q117 2SA1037K
PI101 PLI-13
DISC NO. DETECTOR
FPC Photo/Interrupt P. C. Board
IC602 15590W70
μ-COM
X601 4.19MHz
IC603 BA10393F
TH601
TEMPERATURE DETECTOR
CH401
TO FRONT P. C. BOARD (CB401)
+5V SWITCHING
Q601 DTA124EU
Q602 DTC124EU
ACC DETECTOR
Q603 DTA124EU
DATA BUS CONTROL
IC605 MC14538BFEL
BUS RESET DETECTOR
ENABLE
OUTPUT LATCH
CONTROL
RESET LATCH
Q607 2SC2412K
Q608 DTC124EU
Q609 DTA144EU
Q604 2SC2412K
ZD601 HZS6B1L
IC608 S-8052HNM-CR
Q801 2SD1858
ZD801 HZS9C1L
LAMP +B
Q802 DTA124EU
Q803 DTC124EU
Q804 2SD2008
MUTE DRIVER
ZD806 HZS9C3L
ZD803 HZS9A2L
ZD802 HZS11A3L
Q805 DTC124EU
DIMMER CONTROL
Q816 2SA15
A
B
C
D
E
F
G
H

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$


IC201 PCM67U
D/A CONVERTER
IC202 BA4560F
IC203 BA4560F
I/V CONVERTER
L.P.F
Q204 2SD1328
Q203 2SD1328
MUTING
D201 DAP202U
AUDIO REGULATOR
Q811 2SB1243
Q812 DTA124EU
IC803 M5236ML
ASO PROTECTOR
OVER CURRENT PROTECTOR
START CIRCUIT
REF. VOLT GENERATOR
Q813 DTC124EU
IC802 BA4560F
1/2Vcc
Q201 2SC2412K
Q806 2SD1858
DIGITAL AUDIO +5V
μ-COM +5V
QRB P.C. Board
DIN CONNECTOR & DIMMER CONTROL WIRE
ET901 QRB SOCKET
ET902
DIMMER CONTROL LEAD
TO TUNER UNIT JK201
IC609 S-8054HN-CB
BATTERY DETECTOR
IC701 LB1641
LOADING MOTOR DRIVER
IC702 LB1641
ELEVATOR MOTOR DRIVER
IC703 LB1641
TRAY MOTOR DRIVER
PRE-DRIVER
INPUT LOGIC BLOCK
IC602 15590W70
μ-COM
X601 4.19MHz
IC603 BA10393F
TEMPERATURE DETECTOR
+5V SWITCHING
CH401
TO FRONT P.C. BOARD (CB401)
IC605 MC14538BFEL
BUS RESET DETECTOR
OUTPUT LATCH
ENABLE
CONTROL
RESET LATCH
Q607 2SC2412K
Q608 DTC124EU
Q609 DTA144EU
IC608 S-8052HNM-CR
RESET
ACC DETECTOR
DATA BUS CONTROL
Q601 DTA124EU
Q602 DTC124EU
Q603 DTA124EU
Q604 2SC2412K
Q801 2SD1858
Q802 DTA124EU
Q803 DTC124EU
Q804 2SD2008
Q805 DTC124EU
LAMP +B
DIMMER CONTROL
MUTE DRIVER
Q816 2SA1576
PT701 PS3062
PT702 PS3062
LOADING END DETECTOR
GUILLOTINE DETECTOR
Q814 DTA124EU
MUTE DRIVER
Q815 DTC124EU
Q606 DTC124EU
BUS RESET DETECTOR

IC106

1	5V	9	0V	17	–
2	PS	10	0V	18	–
3	PS	11	5V	19	PS
4	PS	12	–	20	PS
5	0V	13	PS	21	0V
6	–	14	PS	22	PS
7	–	15	PS		
8	0V	16	5V		

IC109

1	0V
2	PS
3	0V
4	PS
5	5.2V

IC201

1	5V	9	3.4V	17	PS
2	3.4V	10	0V	18	–
3	–	11	0V	19	5V
4	3.4V	12	0V	20	5V
5	3.4V	13	PS		
6	4V	14	PS		
7	3.4V	15	PS		
8	–	16	PS		

IC202

1	4.2V
2	3.4V
3	3.4V
4	0V
5	3.4V
6	3.4V
7	4.2V
8	8V

IC203

1	SIG
2	SIG
3	SIG
4	0V
5	SIG
6	SIG
7	SIG
8	8V

IC602

1	0.3V	17	0V	33	0.3V	49	5V
2	PS	18	4.8V	34	4.8V	50	–
3	PS	19	4.8V	35	0V	51	0V
4	PS	20	4.8V	36	4.8V	52	0V
5	5V	21	4.8V	37	5V	53	PS
6	PS	22	0V	38	5V	54	PS
7	5V	23	0V	39	–	55	PS
8	PS	24	0V	40	0V	56	PS
9	PS	25	5V	41	0V	57	5V
10	PS	26	0V	42	5V	58	5V
11	PS	27	4.6V	43	5V	59	5V
12	–	28	5V	44	0V	60	PS
13	–	29	PS	45	5V	61	PS
14	0V	30	PS	46	4.8V	62	5V
15	5V	31	0V	47	4.8V	63	0V
16	0V	32	4.8V	48	0V	64	0V

IC601

1	5V
2	0V
3	0V
4	5V
5	5V
6	0V
7	0V
8	5V

IC608

1	4.8V
2	5V
3	0V

IC609

1	4.5V
2	6.6V
3	0V

IC603

1	0.4V
2	5V
3	2V
4	0V
5	2.5V
6	4.4V
7	0V
8	5V

IC605

1	0V	9	–
2	0.5V	10	0V
3	5V	11	5V
4	0V	12	0V
5	PS	13	5V
6	5V	14	4.2V
7	–	15	0V
8	0V	16	5V

IC701 , 702

1	0V	6	4.6V
2	0.6V	7	8V
3	0.6V	8	8V
4	0.4V	9	0.8V
5	4.6V	10	0.6V

IC703

1	0V	6	0V
2	0.6V	7	7.8V
3	0.6V	8	7.8V
4	–	9	0.6V
5	0V	10	0.6V

IC801

1	1.5V
2	0V
3	PS
4	0V
5	1.2V
6	13.5V
7	13.5V
8	PS

IC802

1	4V
2	4V
3	4V
4	0V
5	0.8V
6	0.6V
7	7.2V
8	7.8V

IC803

1	13V
2	0V
3	13V

	E	C	B
Q117	5V	0V	5V
Q201	5V	8V	5.8V
Q203	SIG	0V	SIG
Q204	SIG	0V	SIG
Q601	5V	5V	0V
Q602	0V	0V	5V
Q603	5V	5V	0V
Q604	0V	0V	0.6V
Q606	0V	5V	0V
Q607	0V	PS	PS
Q608	0V	PS	PS
Q609	5V	PS	PS
Q801	8.5V	13.5V	9.5V
Q802	13.5V	13.5V	0V
Q803	0V	0V	5V
Q804	10V	13.5V	10V
Q805	0V	0V	2V
Q806	6V	13.5V	6.5V
Q807	5V	8V	6V
Q808	13.5V	8V	PS
Q809	13.5V	13.5V	0V
Q810	0V	0V	5V
Q811	14V	8V	13.5V
Q812	13V	13V	0V
Q813	0V	0V	5V
Q814	13.5V	0V	13.5V
Q815	0V	13.5V	0V
Q816	6.5V	0V	6V

[Measuring Conditions]

- * Power Supply Voltage : DC14V
- * Measuring Meter : Digital Multi Voltmeter
- * Measuring Point Reference : Between Ground
- * Measuring Conditions : Be playing back the 2nd Music of the test CD (YEDS-18)

▨ CD Signal Line (Digital)
▨ L-ch Signal Line
▨ R-ch Signal Line

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. = Resistor
C.F. = Carbon Film
M.F. = Metal Film
M.O. = Metal Oxide Film
M.P. = Metal Plate
TR. = Transistor
TRANS. = Transformer
CP. = Chip

CAP. = Capacitor
ELY. = Electrolytic
CER. = Ceramic
MYL. = Mylar
TAN. = Tantalum
POLY. = Polystyrol
PP. = Polypropylene
PLT. = Polyethylene
PF. = Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC601	51T35085W01	S-24S45IF
IC602	51T15590W70	15590W70
IC603	51T73285F11	BA10393F
or	51T73285F21	XRA10393F
IC605	51T25370W01	MC14538BFEL
IC608	51T95014F13	S-8052HNM-CR
IC609	51T95014F10	S-8054HN-CB
IC701	51T15267W01	LB1641
IC702	51T15267W01	LB1641
IC703	51T15267W01	LB1641
IC801	51T15510W01	MC34063AML

Transistors / Photo Transistors

Symbol No.	Part No.	Description
Q601	48T94606F53	CP., DTA124EU
Q602	48T94606F03	CP., DTC124EU
Q603	48T94606F53	CP., DTA124EU
Q604	48T63417F01	CP., 2SC2412K
Q606	48T94606F03	CP., DTC124EU
Q607	48T63417F01	CP., 2SC2412K
Q608	48T94606F03	CP., DTC124EU
Q609	48T94606F51	CP., DTA144EU
Q801	48T83415F01	2SD1858
Q802	48T94606F53	CP., DTA124EU
Q803	48T94606F03	CP., DTC124EU
Q804	48T15289W01	2SD2008
Q805	48T94606F03	CP., DTC124EU
Q807	48T83415F01	2SD1858
Q808	48T15511W02	CP., 2SB1261
Q809	48T94606F53	CP., DTA124EU
Q810	48T94606F03	CP., DTC124EU
Q814	48T94606F53	CP., DTA124EU
Q815	48T94606F03	CP., DTC124EU
Q816	48T94581F01	CP., 2SA1576
PT701	48T35506W01	Photo, PS3062
PT702	48T35506W01	Photo, PS3062

Diodes

Symbol No.	Part No.	Description
D601	48T94608F03	CP., DAN202U
D602	48T94608F03	CP., DAN202U
D603	48T94608F03	CP., DAN202U
D605	48T94608F03	CP., DAN202U
D606	48T94608F03	CP., DAN202U
D801	48T15702W01	CP., SB05-05CP
D802	48T94608F03	CP., DAN202U
D803	48T94608F03	CP., DAN202U
D804	48T84052F11	11ES2
D805	48T94608F03	CP., DAN202U
ZD601	48T25766W04	Zener, HZS6B1L
ZD602	48T25766W26	Zener, HZS9C3L
ZD701	48T25766W04	Zener, HZS6B1L
ZD702	48T25801W12	Zener, HZS5CLL
ZD801	48T25766W24	Zener, HZS9C1L
ZD802	48T25766W29	Zener, HZS11A3L
ZD803	48T25766W20	Zener, HZS9A2L
ZD805	48T25766W04	Zener, HZS6B1L
ZD806	48T25766W26	Zener, HZS9C3L

Coils

Symbol No.	Part No.	Description
L801	24T71179F05	Inductor, 220μH
L802	24T16271W13	220μH

Crystal / Thermistor

Symbol No.	Part No.	Description
X601	91T15285W01	CER., Lock 4.19MHz
TH601	48T93439F06	Thermistor, 100Kohm

Symbol No.	Part No.	Description
Capacitors		
C601	08S65128F69	CP., 0.01μF
E601	23S61523F12	ELY., 10μF / 16V
E602	23S61523F25	ELY., 0.1μF / 50V
C603	08S65128F69	CP., 0.01μF
E603	23S61523F12	ELY., 10μF / 16V
E604	23S61523F29	ELY., 1μF / 50V
C605	08S65128F51	CP., 470pF
E605	23S61523F08	ELY., 100μF / 6.3V
C606	08S65128F49	CP., 390pF
C610	08T15807W05	CP., 0.1μF
C611	08T15807W05	CP., 0.1μF
C701	08S65128F69	CP., 0.01μF
C702	08S65128F69	CP., 0.01μF
C703	08S65128F69	CP., 0.01μF
C704	08S65128F69	CP., 0.01μF
C705	08S65128F69	CP., 0.01μF
C706	08S65128F69	CP., 0.01μF
C801	08S65128F37	CP., 120pF
E801	23S61523F29	ELY., 1μF / 50V
C802	08S65128F69	CP., 0.01μF
E802	23S61523F29	ELY., 1μF / 50V
E803	23S61523F13	ELY., 22μF / 16V
E806	23S61523F12	ELY., 10μF / 16V
E807	23S61523F12	ELY., 10μF / 16V
E808	23T25149W15	ELY., 4.7μF / 35V
E809	23T90882F18	ELY., 470μF / 10V
E810	23S61523F12	ELY., 10μF / 16V
E814	23S61523F28	ELY., 0.47μF / 50V
E815	23T74181F40	CP., TAN. 10μF / 25V
E816	23S61523F12	ELY., 10μF / 16V
E817	23T00149L29	ELY., 1000μF / 16V
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R601	06S64995F89	33K ohm
R602	06S64995F81	15K ohm
R603	06S64995F89	33K ohm
R604	06S64995F89	33K ohm
R605	06S64995F89	33K ohm
R606	06S64995F89	33K ohm
R607	06S64995F89	33K ohm
R608	06S64995F89	33K ohm
R609	06S64996F02	100K ohm
R610	06S64996F02	100K ohm
R611	06S64996F02	100K ohm

Symbol No.	Part No.	Description
R612	06S64995F79	12K ohm
R613	06S64995F93	47K ohm
R614	06S64995F93	47K ohm
R615	06S64996F26	1M ohm
R616	06S64996F02	100K ohm
R619	06S64995F93	47K ohm
R620	06S64995F93	47K ohm
R621	06S64995F69	4.7K ohm
R622	06S64996F26	1M ohm
R624	06S64996F26	1M ohm
R625	06S64995F77	10K ohm
R627	06S64995F77	10K ohm
R628	06S53330F93	47K ohm 1/8W
R629	06T70072F65	3.3K ohm 1/4W
R630	06S64995F77	10K ohm
R631	06S64995F85	22K ohm
R632	06S64995F85	22K ohm
R633	06S64995F83	18K ohm
R637	06S64996F02	100K ohm
R638	06S64996F02	100K ohm
R640	06S64996F02	100K ohm
R641	06S64995F77	10K ohm
R642	06S64995F77	10K ohm
R699	06S64995F89	33K ohm
R701	06T70072F01	4.7 ohm 1/4W
R704	06S64995F53	1K ohm
R705	06S64995F37	220 ohm
R707	06S64995F41	330 ohm
R708	06S64995F63	2.7K ohm
R709	06S64995F89	33K ohm
R710	06S64996F02	100K ohm
R711	06S64995F63	2.7K ohm
R712	06T70072F01	4.7 ohm 1/4W
R713	06T70072F01	4.7 ohm 1/4W
R714	06T70072F01	4.7 ohm 1/4W
R801	06S64995F69	4.7K ohm
R802	06S64995F77	10K ohm
R803	06T70072F45	470 ohm 1/4W
R804	06S64995F77	10K ohm
R806	06T70072F45	470 ohm 1/4W
R807	06T70072F47	560 ohm 1/4W
R808	06T70072F47	560 ohm 1/4W
R809	06T70072F29	100 ohm 1/4W
R810	06S64995F81	15K ohm
R811	06S64995F63	2.7K ohm
R821	06S64995F77	10K ohm
R822	06S64996F10	220K ohm
R823	06S64995F61	2.2K ohm

Symbol No.	Part No.	Description
Audio P. C. Board		
IC's		
IC106	51T35105W02	SM5840CS
IC109	51T35229W01	TC7SU04F
IC201	51T35409W03	PCM67U
IC202	51T92001F11	BA4560F
or	51T92001F21	XRA4560F
IC203	51T92001F11	BA4560F
or	51T92001F21	XRA4560F
IC802	51T92001F11	BA4560F
or	51T92001F21	XRA4560F
IC803	51T90890F01	M5236ML
Transistors		
Q201	48T63417F01	CP., 2SC2412K
Q203	48T63788F01	CP., 2SD1328
Q204	48T63788F01	CP., 2SD1328
Q806	48T83415F01	2SD1858
Q811	48T84366F04	2SB1243
Q812	48T94606F53	CP., DTA124EU
Q813	48T94606F03	CP., DTC124EU
Diodes		
D201	48T94608F02	CP., DAP202U
D806	48T94608F03	CP., DAN202U
ZD201	48T25766W04	Zener, HZS6B1L
ZD804	48T25766W09	Zener, HZS6C3L
Crystal		
X101	91T25806W92	16.9344MHz
Capacitors		
C101	08S82122F13	CP., 10pF
C103	08S82122F13	CP., 10pF
C104	08S82122F13	CP., 10pF
C133	08S65128F69	CP., 0.01μF
E141	23T74437F32	TAN., 10μF / 16V

Symbol No.	Part No.	Description
C201	08S65128F51	CP., 470pF
E201	23T25149W09	ELY., 10μF / 16V
C202	08S65128F51	CP., 470pF
E202	23T25149W09	ELY., 10μF / 16V
E203	23T25149W09	ELY., 10μF / 16V
E204	23T25149W09	ELY., 10μF / 16V
C205	08S82122F49	CP., 330pF
E205	23T45102W25	ELY., 10μF / 50V
C206	08S82122F49	CP., 330pF
C207	08T35388W15	P.P., 6800pF
E207	23T25149W09	ELY., 10μF / 16V
C208	08T35388W15	P.P., 6800pF
E208	23T25149W09	ELY., 10μF / 16V
E209	23T25149W15	ELY., 4.7μF / 35V
E210	23T45102W25	ELY., 10μF / 50V
E213	23T45102W25	ELY., 10μF / 50V
E215	23T45102W25	ELY., 10μF / 50V
E216	23T45102W25	ELY., 10μF / 50V
C227	08S65128F69	CP., 0.01μF
C804	08S65128F76	CP., 0.1μF
E804	23S61523F12	ELY., 10μF / 16V
C805	08S65128F76	CP., 0.1μF
E805	23S61523F12	ELY., 10μF / 16V
E811	23T45102W24	ELY., 4.7μF / 50V
E812	23T45102W25	ELY., 10μF / 50V
E813	23T90882F27	ELY., 220μF / 16V
E820	23T90882F25	ELY., 100μF / 16V
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R169	06S64995F53	1K ohm
R170	06S64995F53	1K ohm
R171	06S64995F53	1K ohm
R172	06S64995F53	1K ohm
R173	06S64995F45	470 ohm
R174	06S64995F37	220 ohm
R201	06S64995F55	1.2K ohm
R202	06S64995F55	1.2K ohm
R203	06S64995F69	4.7K ohm
R204	06S64995F69	4.7K ohm
R205	06S64995F69	4.7K ohm
R206	06S64995F69	4.7K ohm
R207	06S64995F77	10K ohm
R209	06S64995F59	1.8K ohm
R210	06S64995F59	1.8K ohm
R215	06S64995F48	620 ohm
R216	06S64995F48	620 ohm
R217	06S64995F59	1.8K ohm
R218	06S64995F59	1.8K ohm
R219	06S64995F21	47 ohm

Symbol No.	Part No.	Description
R220	06S64995F21	47 ohm
R221	06S64995F85	22K ohm
R222	06S64995F85	22K ohm
R225	06S64995F65	3.3K ohm
R226	06S64995F65	3.3K ohm
R702	06S64995F37	220 ohm
R703	06S64995F37	220 ohm
R805	06T70072F13	22 ohm 1/4W
R812	06S64995F77	10K ohm
R813	06S64995F85	22K ohm
R814	06S64995F85	22K ohm
R815	06S64995F87	27K ohm
R816	06S64995F77	10K ohm
R817	06S64995F77	10K ohm
R818	06S64995F81	15K ohm
R819	06T70072F37	220 ohm 1/4W
R820	06S64995F77	10K ohm

Front P. C. Board

IC's

Symbol No.	Part No.	Description
IC401	51T16618W02	MC14014BFEL
IC402	51T35410W02	BA226F
IC403	51T83524F01	BX1408
IC404	51T83905F02	LC7582E

Diode

Symbol No.	Part No.	Description
D401	48T94471F01	CP., IMN10

Switches

Symbol No.	Part No.	Description
S401	40T10876W22	Tact, SKHLBC (SDK)
S402	40T10876W22	Tact, SKHLBC (TUNE / DISP)
S403	40T10876W22	Tact, SKHLBC (POWER)
S404	40T10876W22	Tact, SKHLBC (⏏)
S405	40T10876W22	Tact, SKHLBC (MONO / P.SCAN)
S407	40T10876W22	Tact, SKHLBC (D.SEL / DX)
S408	40T10876W22	Tact, SKHLBC (UP / ⏭)
S409	40T10876W22	Tact, SKHLBC (DN / ⏮)
S410	40T10876W22	Tact, SKHLBC (M1 / M.I.X.)
S411	40T10876W22	Tact, SKHLBC (M4)
S412	40T10876W22	Tact, SKHLBC (D.A.P.)
S413	40T10876W22	Tact, SKHLBC (M2 / REPEAT)
S414	40T10876W22	Tact, SKHLBC (M5)
S415	40T10876W22	Tact, SKHLBC (TUNER / BAND)
S416	40T10876W22	Tact, SKHLBC (M3 / SCAN)
S417	40T10876W22	Tact, SKHLBC (M6)
S418	40T10876W22	Tact, SKHLBC (DISC ▶ / ‖)
S419	40T35390W01	Rotary Encoder (- / L / R, + / R / F, MODE)

Lamps

Symbol No.	Part No.	Description
PL401	65T35507W01	10V-60mA
PL402	65T35507W01	10V-60mA
PL403	65T35507W01	10V-60mA
PL404	65T95083F01	6.7V-85mA

LED's

Symbol No.	Part No.	Description
LD402	48T16167W12	MBG486K (GRN)
LD403	48T16167W12	MBG486K (GRN)
LD404	48T16167W12	MBG486K (GRN)
LD405	48T16167W12	MBG486K (GRN)
LD408	48T16167W12	MBG486K (GRN)
LD409	48T16167W12	MBG486K (GRN)

Capacitors

Symbol No.	Part No.	Description
C401	08S65128F72	CP., 0.022μF
E401	23S61523F12	ELY., 10μF /16V
C402	08S65128F69	CP., 0.01μF
C403	08S53332F60	CP., 0.15μF
C404	08S53332F60	CP., 0.15μF
C405	08S65128F69	CP., 0.01μF
C406	08S65128F72	CP., 0.022μF
C407	08S65128F69	CP., 0.01μF
C408	08S65128F55	CP., 680pF

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

Symbol No.	Part No.	Description
R401	06S64995F93	47K ohm
R402	06S64995F93	47K ohm
R403	06S64995F93	47K ohm
R404	06S64995F93	47K ohm
R405	06S64995F93	47K ohm
R406	06S64995F93	47K ohm
R407	06S64996F18	470K ohm
R408	06S64995F69	4.7K ohm
R409	06S64995F77	10K ohm
R410	06S64995F77	10K ohm
R411	06S64995F69	4.7K ohm
R412	06S64996F18	470K ohm
R418	06S64995F93	47K ohm
R419	06T70072F35	180 ohm 1/4W
R420	06T70072F35	180 ohm 1/4W
R421	06T70072F13	22 ohm 1/4W

QRB P. C. Board

Capacitors

Symbol No.	Part No.	Description
C299	08S65128F57	CP., 1000pF
C899	08T90316F29	TF, 0.1μF
or	08T35122W13	TF, 0.1μF

CD - LSI P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25985W01	TC9236F
IC102	51T25984W01	TA8191F

Transistors / Photo Transistor

Symbol No.	Part No.	Description
Q101	48T62967F03	CP., DTC124K
Q102	48T63420F01	CP., 2SA1037K
Q103	48T80611F01	CP., 2SB1132
Q110	48T62967F02	CP., DTC114K
Q111	48T63417F01	CP., 2SC2412K
Q112	48T62967F09	CP., DTC114TK
Q113	48T62967F09	CP., DTC114TK
Q114	48T62967F03	CP., DTC124K
Q115	48T62966F03	CP., DTA124
Q116	48T62967F03	CP., DTC124K

Diodes

Symbol No.	Part No.	Description
D103	48T63462F01	CP., DAN202K
D104	48T63462F01	CP., DAN202K

Capacitors

Symbol No.	Part No.	Description
C101	08S65128F69	CP., 0.01μF
E101	23T74180F23	CP., ELY. 100μF / 6.3V
E102	23T74181F38	CP., TAN. 10μF / 10V
E103	23T74181F38	CP., TAN. 10μF / 10V
E104	23T74181F38	CP., TAN. 10μF / 10V
C105	08S65128F63	CP., 3300pF
E105	23T74181F23	CP., TAN. 3.3μF / 10V
C106	08S65128F63	CP., 3300pF
C107	08S82122F37	CP., 100pF
E107	23T74181F38	CP., TAN. 10μF / 10V
C108	08S65128F69	CP., 0.01μF
C109	08S65128F69	CP., 0.01μF
C110	08S65128F69	CP., 0.01μF
C111	08S65128F57	CP., 1000pF
C113	08S65128F71	CP., 0.015μF
C114	08S65128F64	CP., 3900pF
C115	08T15807W05	CP., 0.1μF
C116	08S82122F45	CP., 220pF
C117	08S65128F62	CP., 2700pF
E117	23T74181F07	CP., TAN. 0.47μF / 25V
C118	08T15399W03	CP., 0.047μF
E118	23T74181F38	CP., TAN. 10μF / 10V
C119	08S82122F31	CP., 56pF
C120	08S65128F69	CP., 0.01μF
E120	23T74181F38	CP., TAN. 10μF / 10V
C121	08S82122F15	CP., 12pF
E121	23T74181F38	CP., TAN. 10μF / 10V
C122	08S65128F69	CP., 0.01μF
C123	08T15807W05	CP., 0.1μF
C124	08S82122F06	CP., 3pF

Symbol No.	Part No.	Description
C125	08S65128F69	CP., 0.01μF
C126	08T15807W05	CP., 0.1μF
C128	08S65128F69	CP., 0.01μF
E128	23T74181F38	CP., TAN. 10μF / 10V
C129	08S65128F69	CP., 0.01μF
C130	08S65128F65	CP., 4700pF
E130	23T74181F05	CP., TAN. 0.33μF / 35V
C140	08S65128F65	CP., 4700pF
E140	23T74181F38	CP., TAN. 10μF / 10V
C141	08T15807W05	CP., 0.1μF
C142	08S65128F60	CP., 1800pF
C143	08S65128F69	CP., 0.01μF

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

Symbol No.	Part No.	Description
R101	06S64995F73	6.8K ohm
R102	06S64996F18	470K ohm
R103	06S64995F39	270 ohm
R105	06S64996F02	100K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F83	18K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R119	06S64995F95	56K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F12	270K ohm
R124	06S64995F83	18K ohm
R125	06S64996F02	100K ohm
R126	06S64995F77	10K ohm
R127	06S64996F02	100K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64996F20	560K ohm

Symbol No.	Part No.	Description
R135	06S64996F02	100K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F69	4.7K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06T70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F39	270 ohm
R146	06S64995F69	4.7K ohm
R147	06S64995F97	68K ohm
R167	06S64996F04	120K ohm
R179	06S64995F63	2.7K ohm
R180	06S64995F77	10K ohm
R181	06S64996F02	100K ohm
R183	06S64996F10	220K ohm
R184	06S64995F89	33K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R191	06S64995F85	22K ohm
R192	06S64995F77	10K ohm
R193	06S64995F53	1K ohm
R194	06S64995F53	1K ohm
R195	06S64995F53	1K ohm
VR101	18T45077W20	Variable, 150K ohm
VR102	18T45077W14	Variable, 15K ohm
VR103	18T45077W09	Variable, 2.2K ohm

Driver P. C. Board

IC's

Symbol No.	Part No.	Description
IC103	51T15264W01	TCA0372M
IC104	51T15264W01	TCA0372M
IC105	51T90889F03	LA6501-TL

Switch

Symbol No.	Part No.	Description
S706	40T35543W02	Detector (LIMIT)

Symbol No.	Part No.	Description
Capacitors		
E108	23T74180F04	CP., ELY. 47μF / 16V
E109	23T74180F03	CP., ELY. 10μF / 16V
C131	08S65128F74	CP., 0.047μF
C132	08S65128F74	CP., 0.047μF
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R148	06S64995F85	22K ohm
R149	06S64995F77	10K ohm
R150	06S64995F77	10K ohm
R151	06S64995F85	22K ohm
R152	06S64995F85	22K ohm
R153	06S64995F77	10K ohm
R154	06S64995F77	10K ohm
R155	06S64995F85	22K ohm
R156	06S64995F85	22K ohm
R157	06S64995F77	10K ohm
R158	06S64995F77	10K ohm
R159	06S64995F85	22K ohm
R160	06S64995F85	22K ohm
R161	06S64995F77	10K ohm
R162	06S64995F77	10K ohm
R163	06S64995F85	22K ohm
R164	06S64995F77	10K ohm
R165	06S64995F85	22K ohm
R166	06T70072F05	10 ohm 1/4W
R168	06T70072F05	10 ohm 1/4W
R706	06S64995F55	1.2K ohm
Miscellaneous		
ET901	09T45101W01	QRB Socket
ET902	01T45154W01	DIN Connector & Dimmer Control Lead Wire
HD101	88T35580W01	Pick Up Unit
LCD401	65T45083W03	LCD Display
LD701	48T16057W02	LED, AN501 (RED)
LD702	48T16057W01	LED, AN501 (RED)
LD703	48T16057W01	LED, AN501 (RED)
M102	01V41200W24	Assy., Sled Motor (3.5V-200mA)
M103	01V14400W40	Assy., Tray Motor (6V-260mA)
M104	01V41100W38	Assy., Loading Motor (7V-260mA)

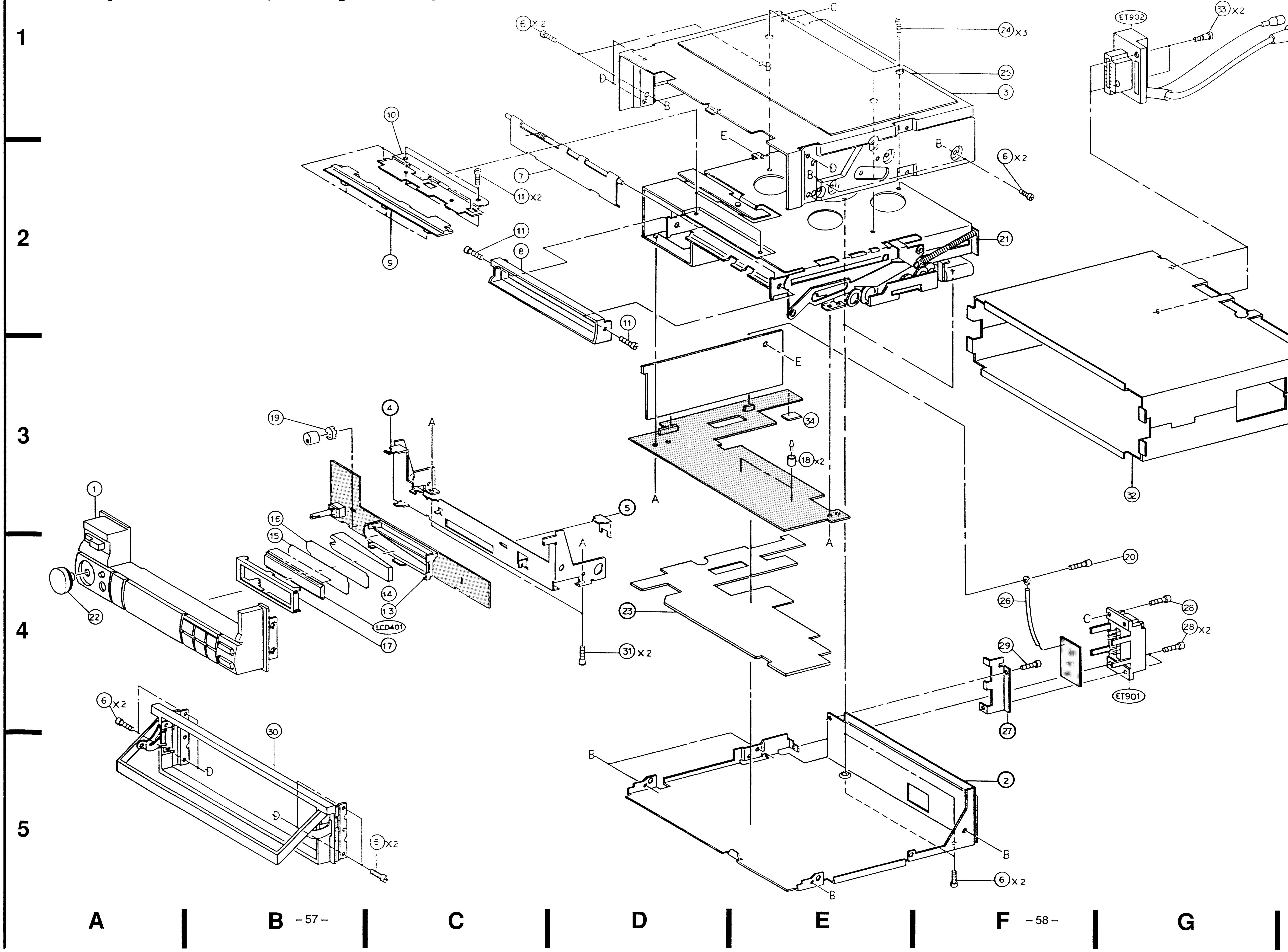
Symbol No.	Part No.	Description
PT703	48T35506W01	TR., Photo PS3062
Q117	48T63420F04	TR., CP. 2SA1037K
S701	40T15222W01	Switch, Detector (LOADING)
S702	40T15222W01	Switch, Detector (HMP)
S703	40T25956W01	Switch, Detector (MAGAZINE)
S704	40T35543W02	Switch, Detector (TRAY OUT)
S705	40T15222W01	Switch, Detector (TRAY IN)

Cabinet Assembly Parts List

Notes : ● The parts without parts list are not supplied.
● Parts marked * will need a long delivery time, or may be not supplied in some cases.

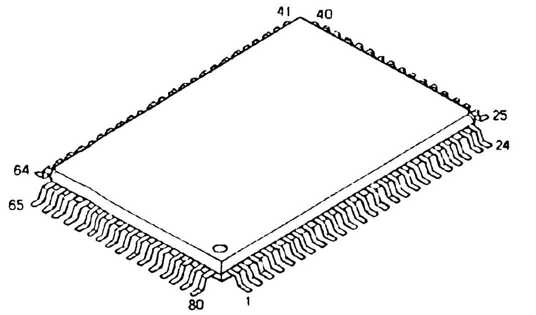
Symbol No.	Index	Part No.	Description
1	3-A	13C40090W03	Assy., Nosepiece
3	1-F	15D40118W01	Cover, Top
6		03S44205G34	Screw, Pan (M2.6 x 5)
7	2-C	15C41627W02	Assy., Cover Door
8	2-C	64C40107W01	Plate, Door
9	2-C	07A40110W01	Bracket, Plate
10	1-C	15B40111W01	Cover, Nose
11		03S94385F32	Screw, Pan (M2 x 2.2)
13	4-C	15B40112W01	Case, LCD
14	4-C	61A40113W01	Lens, LCD
15	3-B	26A40115W01	Reflector, Sheet A
16	3-B	26A40115W02	Reflector, Sheet B
17	4-C	26A40114W01	Shield, Cover
18	3-E	43A53357F02	Spacer
19	3-B	43A13836W01	Spacer, Power
20	3-G	03S44205G07	Screw, Pan (M2.6 x 5)
*21	2-F	01V41600W83	Assy., CD Mechanism DS24A010
22	4-A	36A31085W01	Knob, Rotary
24	1-F	03A48066W01	Screw, Transport (M4 x 34.3)
25	1-F	54B41631W01	Card, Caution
26		01T13082W01	Assy., GND Wire
28	4-G	03S44205G29	Screw, Pan (M2.6 x 6)
29	4-F	03S38013W16	Screw, Pan (M2.6 x 4)
30	3-B	07C21606W02	Assy., Bracket Handle
31	4-D	03S44205G93	Screw, Countersink (M2.6 x 8)
32	3-G	15D41507W01	Case, Mother
33	1-G	03A48064W01	Screw, B/STUD (M2.6 x 7.2)
34	3-E	75S62361F59	Cushion, Rubber

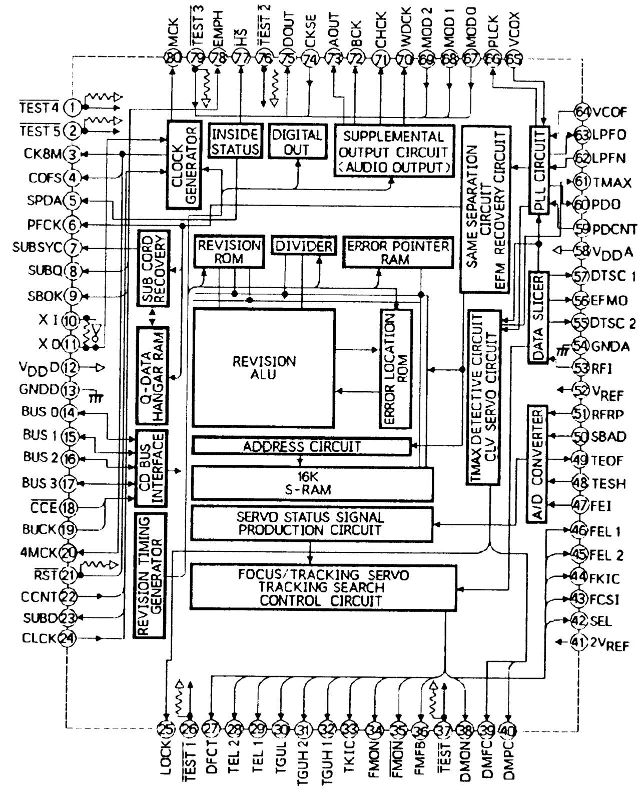
Exploded View (Changer Unit)


1
2
3
4
5
A
B
C
D
E
F
G
6 x2
24 x3
25
3
C
D
B
E
B
6 x2
ET902
33 x2
10
7
11 x2
9
11
8
21
11
E
34
32
19
4
A
18 x2
A
A
1
5
16
15
A
20
14
13
LCD401
26
26
22
17
C
28 x2
23
31 x2
29
ET901
27
6 x2
30
D
D
B
2
6 x2
B
6 x2
B

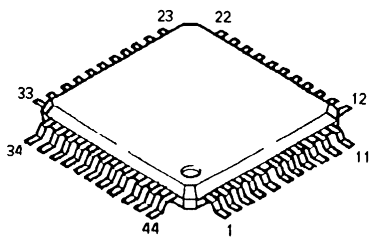
Semi - Conductor Lead Identifications

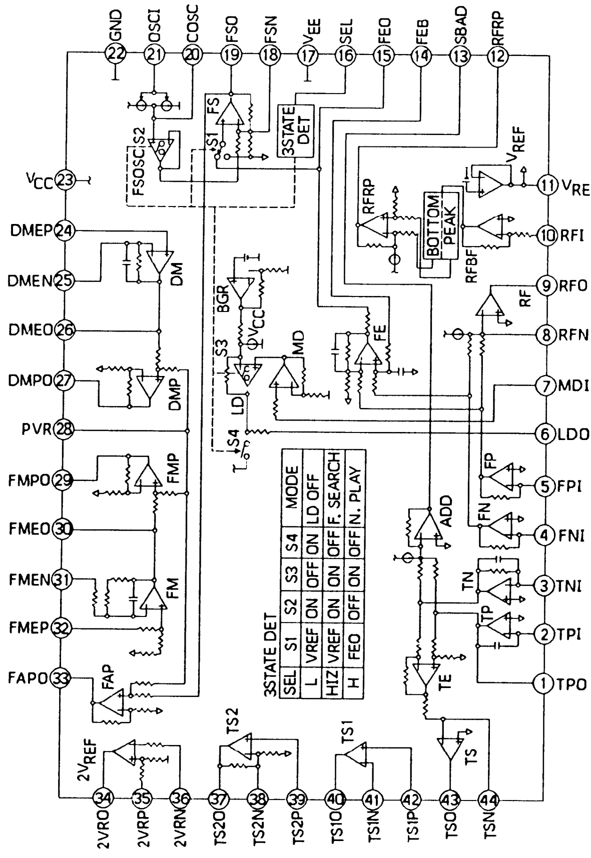
TC9236F : IC101 (DS24A010)


41
40
25
24
64
65
80
1


MCK 80
TEST3 79
EMPH 78
HS 77
TEST2 76
CKSE 75
DOUT 74
AOUT 73
BCK 72
CHCK 71
WDCK 70
MOD2 69
MOD1 68
MOD0 67
PLCK 66
VCOX 65
TEST4 1
TEST5 2
CK8M 3
COFS 4
SPDA 5
PFCK 6
SUBSYC 7
SUBQ 8
SBOK 9
X I 10
X O 11
VDDD 12
GNDD 13
BUS 0 14
BUS 1 15
BUS 2 16
BUS 3 17
CCE 18
BUCK 19
4MCK 20
RST 21
CCNT 22
SUBD 23
CLCK 24
64 VCOF
63 LPFO
62 LPFN
61 TMAX
60 PDO
59 PDCNT
58 VDDA
57 DTSC 1
56 EFMO
55 DTSC 2
54 GNDA
53 RFI
52 VREF
51 RFRP
50 SBAD
49 TEOF
48 TESH
47 FEI
46 FEL 1
45 FEL 2
44 FKIC
43 FCSI
42 SEL
41 2VREF
25 LOCK
26 TEST1
27 DFCT
28 TEL 2
29 TEL 1
30 TGUL
31 TGUH 2
32 TGUH 1
33 TKIC
34 FMON
35 FMON
36 FMFB
37 TEST
38 DMON
39 DMFC
40 DMPC
CLOCK GENERATOR
INSIDE STATUS
DIGITAL OUT
SUPPLEMENTAL OUTPUT CIRCUIT (AUDIO OUTPUT)
SAME SEPARATION CIRCUIT
EFM RECOVERY CIRCUIT
PLL CIRCUIT
SUB CORD RECOVERY
REVISION ROM
DIVIDER
ERROR POINTER RAM
Q-DATA HANGAR RAM
REVISION ALU
ERROR LOCATION ROM
DATA SLICER
TMAX DETECTIVE CIRCUIT
CLV SERVO CIRCUIT
CPU BUS INTERFACE
ADDRESS CIRCUIT
16K S-RAM
A/D CONVERTER
SERVO STATUS SIGNAL PRODUCTION CIRCUIT
REVISION TIMING GENERATOR
FOCUS/TRACKING SERVO TRACKING SEARCH CONTROL CIRCUIT

TA8191F : IC102 (DS24A010)

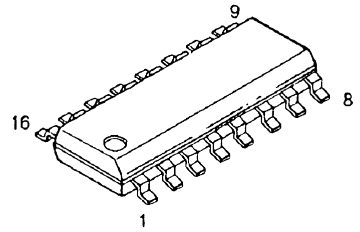

23
22
33
12
34
11
44
1

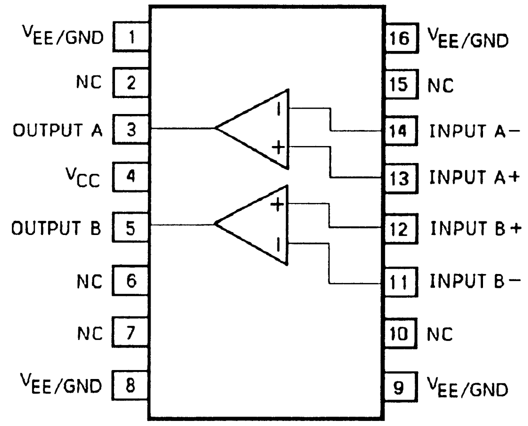

GND 22
OSCI 21
COSC 20
FSO 19
FSN 18
VEE 17
SEL 16
FEO 15
FEB 14
SBAD 13
RFRP 12
VCC 23
DMEP 24
DMEN 25
DMEO 26
DMPO 27
PVR 28
FMPO 29
FMEO 30
FMEN 31
FMEP 32
FAPO 33
11 VREF
10 RFI
9 RFO
8 RFN
7 MDI
6 LDO
5 FPI
4 FNI
3 TNI
2 TPI
1 TPO
2VRO 34
2VRP 35
2VRN 36
TS2O 37
TS2N 38
TS2P 39
TS1O 40
TS1N 41
TS1P 42
TSO 43
TSN 44
FSOSC
S2
S1
FS
3STATE DET
VREF
RFRP
BOTTOM
PEAK
RFBF
RF
DM
BGR
VCC
S3
MD
FE
LD
S4
DMP
FMP
FM
FAP
ADD
FP
FN
TN
TP
TE
2VREF
TS2
TS1
TS

3STATE DET

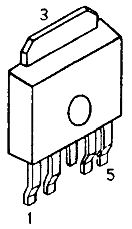
SEL	S1	S2	S3	S4	MODE
L	VREF	ON	OFF	ON	LD OFF
HIZ	VREF	ON	ON	OFF	F. SEARCH
H	FEO	OFF	ON	OFF	N. PLAY

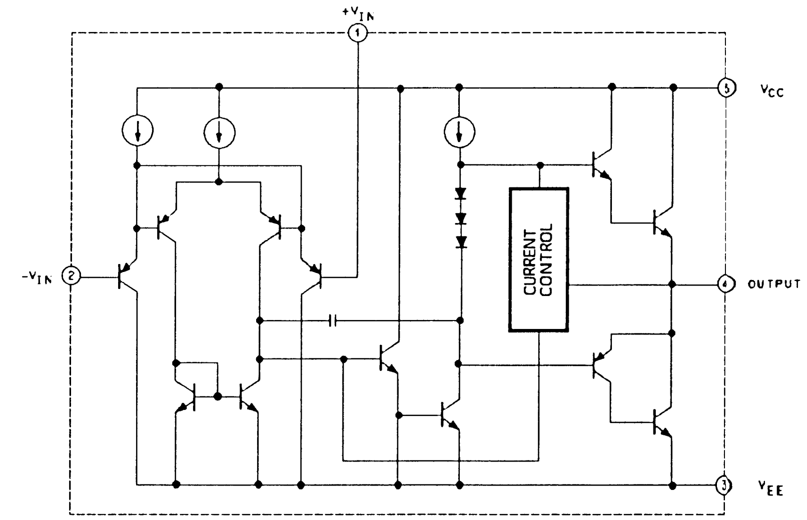
TCA0372M : IC103, 104 (DS24A010)



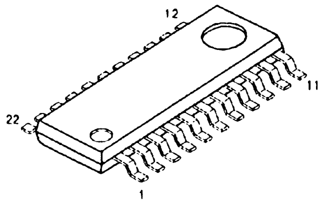

VEE/GND 1
NC 2
OUTPUT A 3
VCC 4
OUTPUT B 5
NC 6
NC 7
VEE/GND 8
16 VEE/GND
15 NC
14 INPUT A−
13 INPUT A+
12 INPUT B+
11 INPUT B−
10 NC
9 VEE/GND

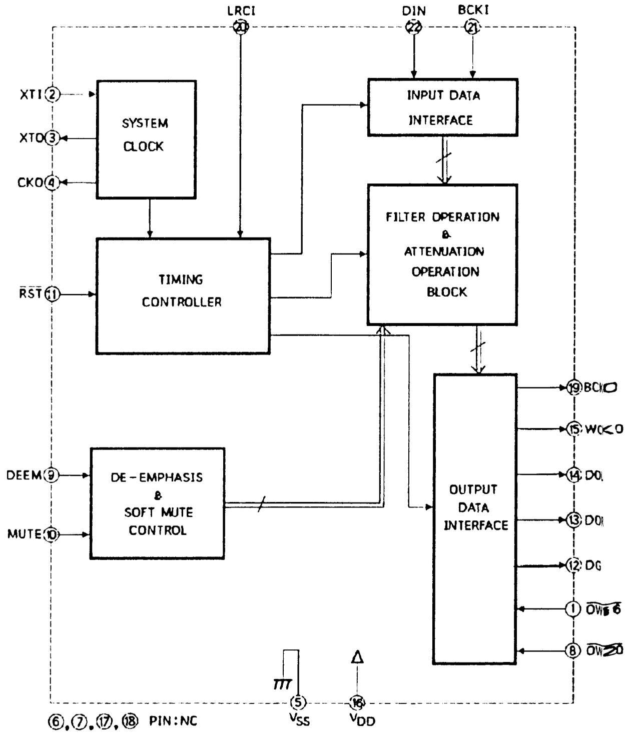
LA6501-TL : IC105 (DS24A010)



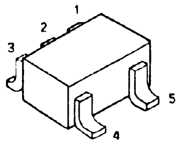

+VIN 1
−VIN 2
5 VCC
4 OUTPUT
3 VEE
CURRENT CONTROL

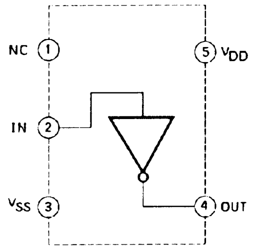
SM5840CS : IC106



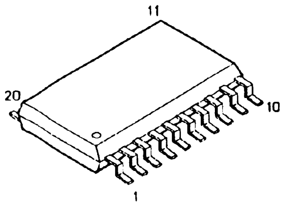

LRCI 20
DIN 22
BCKI 21
XTI 2
XTO 3
CKO 4
RST 11
DEEM 9
MUTE 10
SYSTEM CLOCK
INPUT DATA INTERFACE
FILTER OPERATION & ATTENUATION OPERATION BLOCK
TIMING CONTROLLER
DE-EMPHASIS & SOFT MUTE CONTROL
OUTPUT DATA INTERFACE
19 BCKO
15 WCKO
14 DOL
13 DOR
12 DG
1 OW16
8 OW20
5 VSS
16 VDD
⑥,⑦,⑰,⑱ PIN:NC

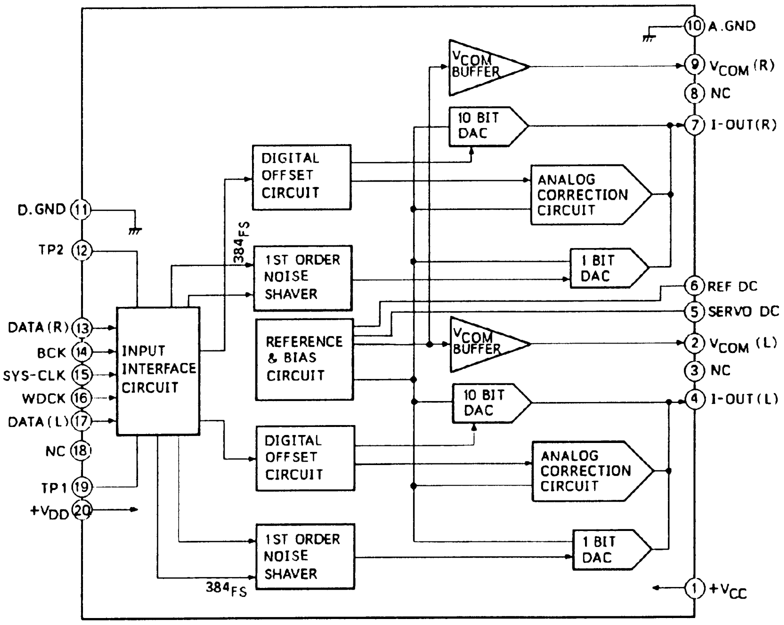
TC7SU04F : IC109



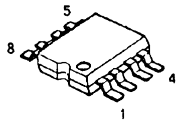

NC 1
IN 2
VSS 3
5 VDD
4 OUT

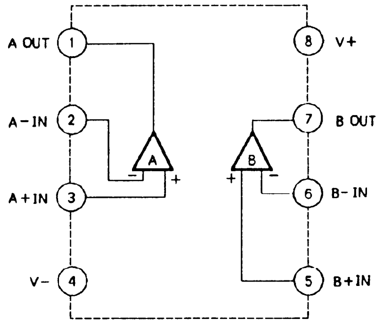
PCM67U : IC201



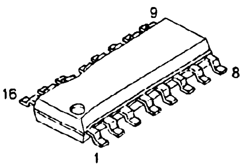

10 A.GND
9 VCOM (R)
8 NC
7 I-OUT(R)
6 REF DC
5 SERVO DC
2 VCOM (L)
3 NC
4 I-OUT(L)
1 +VCC
D.GND 11
TP2 12
DATA(R) 13
BCK 14
SYS-CLK 15
WDCK 16
DATA(L) 17
NC 18
TP1 19
+VDD 20
VCOM BUFFER
10 BIT DAC
DIGITAL OFFSET CIRCUIT
ANALOG CORRECTION CIRCUIT
384FS
1ST ORDER NOISE SHAVER
1 BIT DAC
REFERENCE & BIAS CIRCUIT
INPUT INTERFACE CIRCUIT

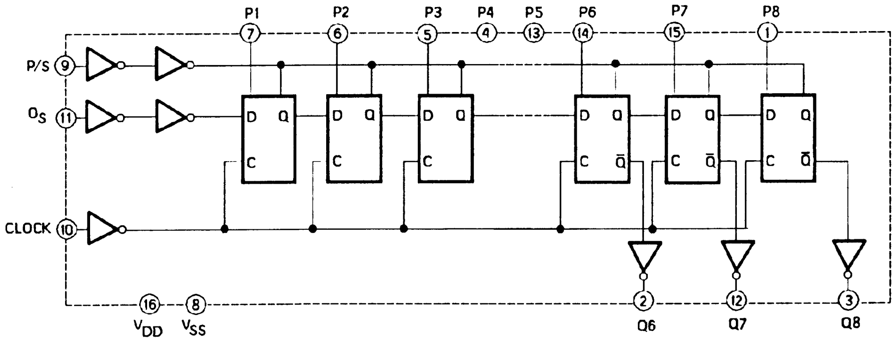
BA4560F : IC202, 203, 802
BA10393F : IC603



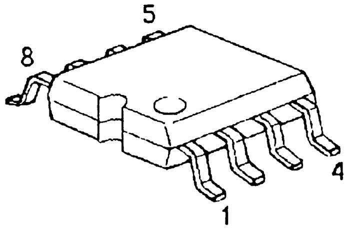

A OUT 1
A-IN 2
A+IN 3
V- 4
8 V+
7 B OUT
6 B-IN
5 B+IN
A
B

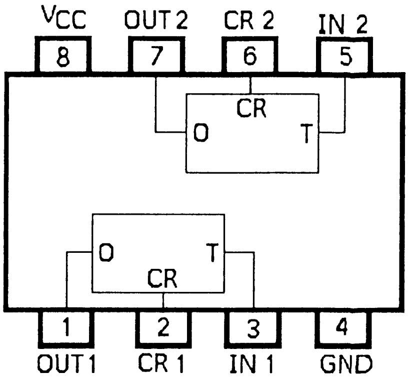
MC14014BFEL : IC401



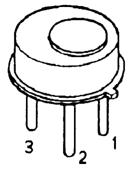

P1
P2
P3
P4
P5
P6
P7
P8
7
6
5
4
13
14
15
1
P/S 9
OS 11
CLOCK 10
D
Q
C
Q̄
16
8
VDD
VSS
2
12
3
Q6
Q7
Q8

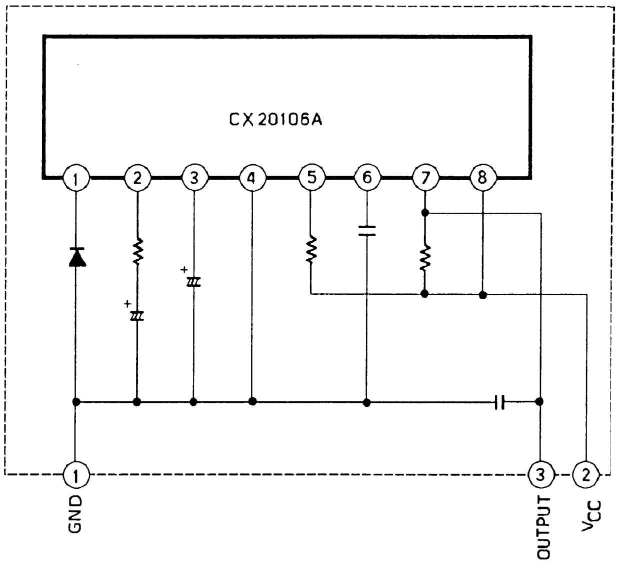
BA226F : IC402



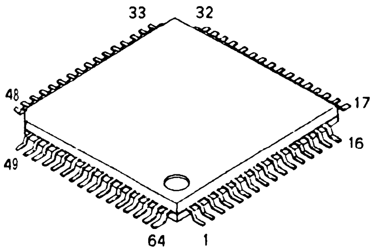

VCC
OUT 2
CR 2
IN 2
8
7
6
5
CR
O
T
O
T
CR
1
2
3
4
OUT 1
CR 1
IN 1
GND

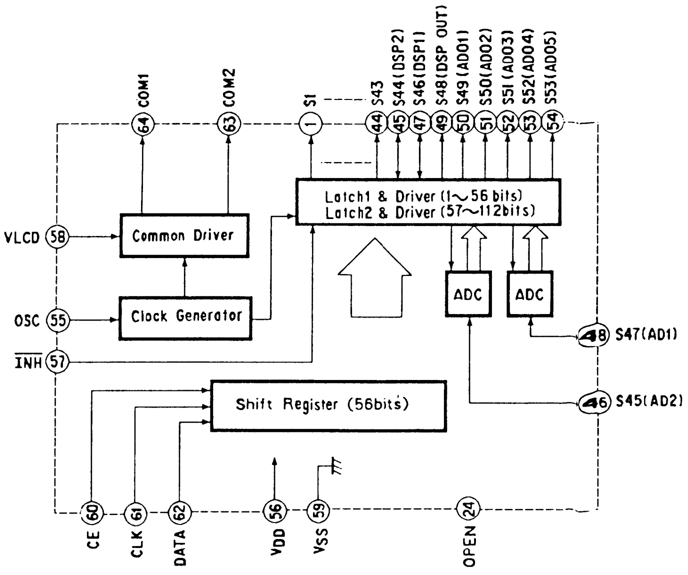
BX1408 : IC403



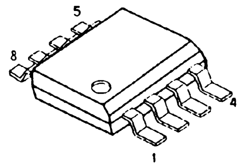

CX20106A
1
2
3
4
5
6
7
8
+
+
1
GND
3
OUTPUT
2
VCC

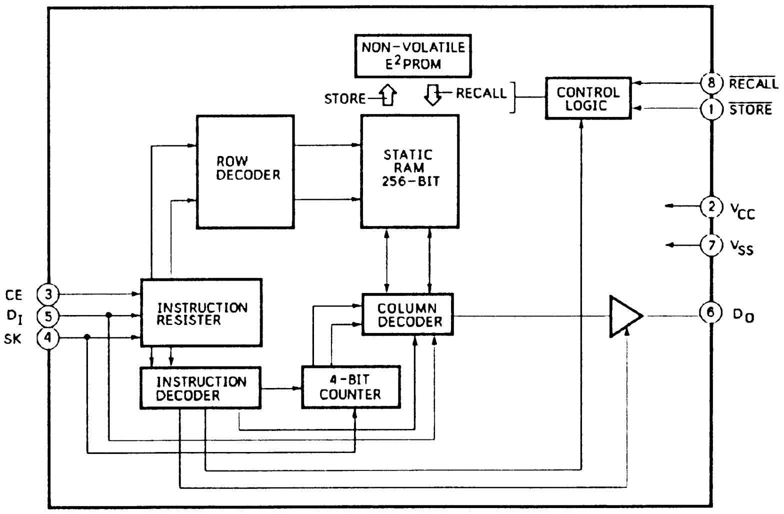
LC7582E : IC404


33
32
48
17
49
16
64
1

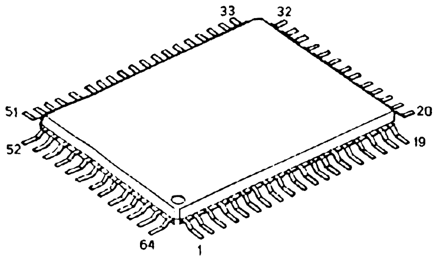

COM1
COM2
S1
S43
S44(DSP2)
S46(DSP1)
S48(DSP OUT)
S49(AD01)
S50(AD02)
S51(AD03)
S52(AD04)
S53(AD05)
64
63
1
44
45
47
49
50
51
52
53
54
Latch1 & Driver (1~56 bits)
Latch2 & Driver (57~112bits)
VLCD 58
Common Driver
OSC 55
Clock Generator
INH 57
ADC
ADC
48 S47(AD1)
46 S45(AD2)
Shift Register (56bits)
60 CE
61 CLK
62 DATA
56 VDD
59 VSS
24 OPEN

S-24S45IF : IC601



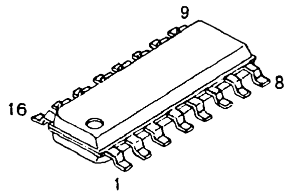

NON-VOLATILE
E^2PROM
STORE
RECALL
CONTROL LOGIC
8 $\overline{\text{RECALL}}$
1 $\overline{\text{STORE}}$
ROW DECODER
STATIC RAM 256-BIT
2 V_{CC}
7 V_{SS}
CE 3
D_I 5
SK 4
INSTRUCTION RESISTER
COLUMN DECODER
6 D_O
INSTRUCTION DECODER
4-BIT COUNTER

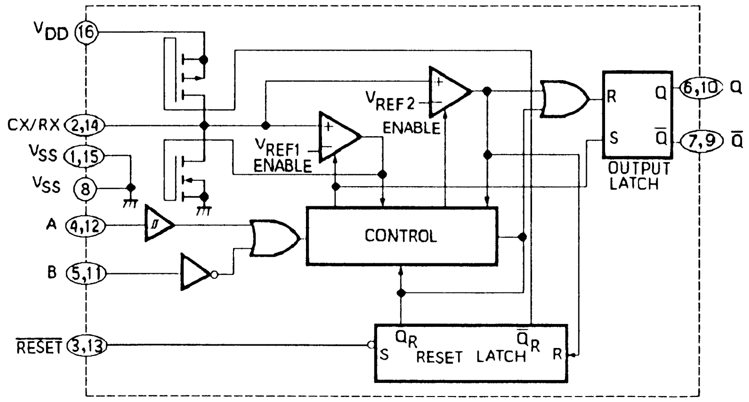
15590W70 : IC602


33
32
51
20
52
19
64
1

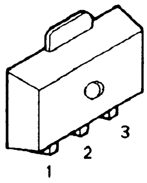
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	DISCNO	I	23	DS1	I	45	$\overline{\text{HMP-SW}}$	I
2	KEY-SI	I	24	EJE-KEY	I	46	MAG-SW	I
3	LC-CLK	O	25	ACC	I	47	$\overline{\text{TRY-OUT}}$	I
4	LC-DATA	O	26	V_{SS}	—	48	$\overline{\text{TRY-IN}}$	I
5	LC-INH	O	27	B-HOLD	I	49	EEP-CLK	O
6	LC-CE	O	28	A-HOLD	I	50	NC	—
7	RESET	I	29	BUS-IN	I	51	FCONT	O
8	X1	—	30	R/C-IN	I	52	AMUTE	O
9	X2	—	31	T-SENS	I	53	TC-BUS3	I/O
10	W-OUT	O	32	DISCP	I	54	TC-BUS2	I/O
11	KEY-S/P	O	33	LODEND	I	55	TC-BUS1	I/O
12	NC	—	34	DISCOK	I	56	TC-BUS0	I/O
13	NC	—	35	LOD-SW	I	57	V_{PP}	—
14	BUS-OUT	O	36	LIM-SW	I	58	V_{DD}	—
15	L-CONT	O	37	NC	—	59	TC-LOCK	I
16	TRY-M (+)	O	38	P-CONT	O	60	TC-BUCK	O
17	TRY-M (−)	O	39	NC	—	61	TC-CCE	O
18	ELV-M (+)	O	40	EEP-CE	O	62	TC-RST	O
19	ELV-M (−)	O	41	EEP-SI	I	63	ENC-1	I
20	LOD-M (+)	O	42	EEP-SO	O	64	ENC-0	I
21	LOD-M (−)	O	43	EEP-SCK	O			
22	DS2	I	44	GND	—			

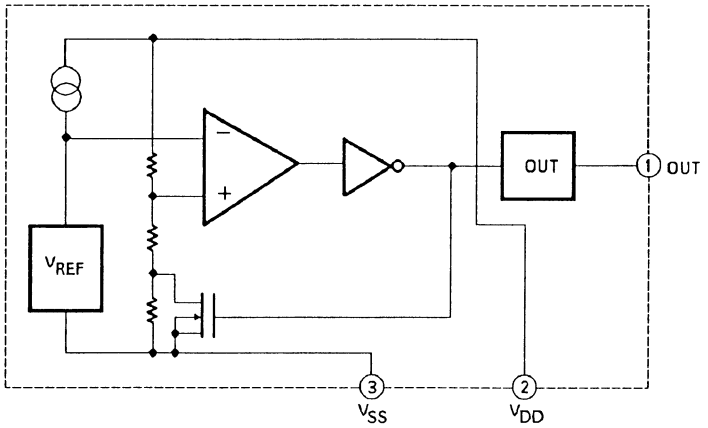
MC14538BFEL : IC605



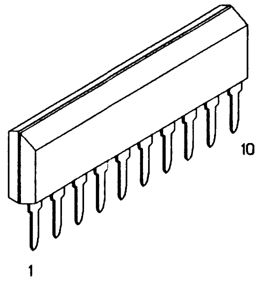

V_{DD} 16
CX/RX 2,14
V_{SS} 1,15
V_{SS} 8
A 4,12
B 5,11
$\overline{\text{RESET}}$ 3,13
V_{REF2}
ENABLE
V_{REF1}
ENABLE
CONTROL
R
S
Q
$\overline{Q}$
6,10 Q
7,9 $\overline{Q}$
OUTPUT LATCH
S
Q_R
RESET LATCH
$\overline{Q}_R$
R

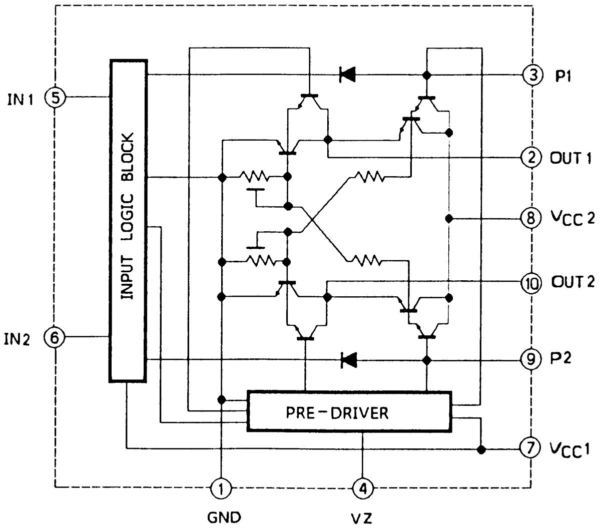
S-8052HNM-CR : IC608
S-8054HN-CB : IC609



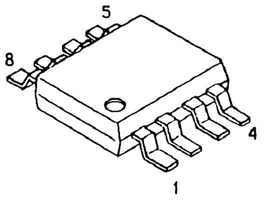

VREF
−
+
OUT
① OUT
③
VSS
②
VDD

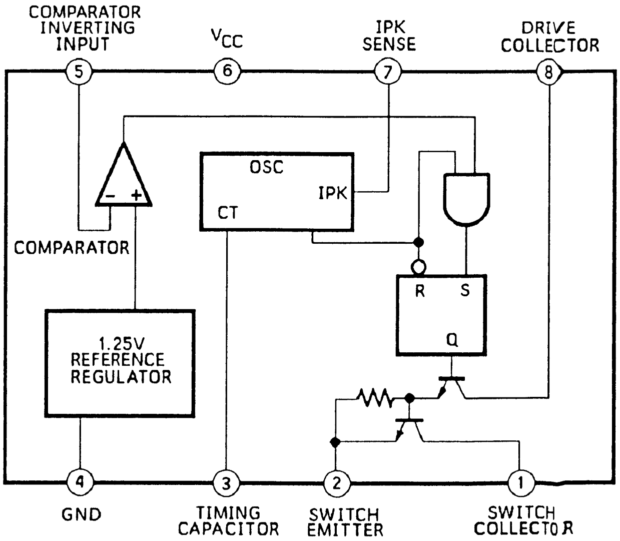
LB1641 : IC701~703



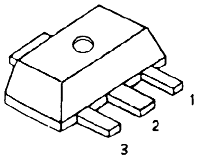

IN1 ⑤
IN2 ⑥
INPUT LOGIC BLOCK
③ P1
② OUT 1
⑧ VCC 2
⑩ OUT 2
⑨ P2
PRE-DRIVER
⑦ VCC1
①
GND
④
VZ

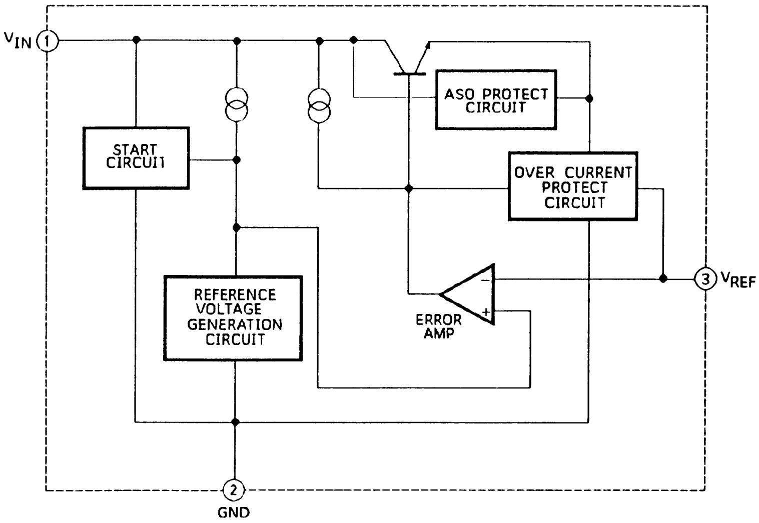
MC34063AML : IC801




COMPARATOR INVERTING INPUT
VCC
IPK SENSE
DRIVE COLLECTOR
⑤
⑥
⑦
⑧
−
+
COMPARATOR
OSC
IPK
CT
R
S
Q
1.25V REFERENCE REGULATOR
④
③
②
①
GND
TIMING CAPACITOR
SWITCH EMITTER
SWITCH COLLECTOR

M5236ML : IC803




V_IN ①
START CIRCUIT
ASO PROTECT CIRCUIT
OVER CURRENT PROTECT CIRCUIT
REFERENCE VOLTAGE GENERATION CIRCUIT
ERROR AMP
−
+
③ V_REF
②
GND

MEMO

Tuner Unit

Contents

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Semi - Conductor Lead Identifications .... 93 to 96

Description of IC Terminal

35246W01 (IC004)

No.	Symbol	I/O	Terminal Description
1	E01	O	PLL error output terminal : Develops "H" output when OSC frequency is higher than reference signal, and "L" output when low. When both are coincided, the terminal is floated.
2	NC	—	N.C.
3	V_{DD}	—	Power supply terminal.
4	NC	—	N.C.
5	VCOH	I	FM / AM VCO input terminal.
6	CE	I	High level input during ignition on.
7	V_{DD}	—	Power supply terminal.
8	NC	—	N.C.
9	MONO	O	Monaural control signal output terminal.
10	NC	—	N.C.
11	NC	—	N.C.
12	AM IF	I	AM IF input terminal.
13	FM IF	I	FM IF input terminal.
14	CMD	I	Input terminal for serial data sent from main microcomputer.
15	$\overline{\text{SCK}}$	O	Sync signal clock output terminal.
16	STS	O	Serial data output terminal for main microcomputer.
17	START	O	Output terminal for communication command sync signal to microcomputer.
18	$\overline{\text{MUTE}}$	O	DTS mute output terminal.
19	LO	O	High during local seek tuned in.
20	X0	O	X'tal element (4.5MHz) connection terminal.
21	X1	I	
22	GND	—	GND.
23	NC	—	N.C.
24	TUN - ON	O	High during tuner tuned in.
25	B3	O	FM / AM switching
26	B2		
27	B1		

No.	Symbol	I/O	Terminal Description
28 ~ 41	NC	—	N.C.
42	GND	—	GND.
43	DK	I	SW 5V PULL UP.
44	$\overline{\text{SK}}$	I	SW 5V PULL UP.
45	$\overline{\text{ST}}$	I	Low level in stereo mode.
46	SD.	I	High level input during seek stop.
47	S. M.	I	FM/AM signal input terminal.
48	CI	I	Initial selection terminal. X'tal OSC in standby mode. OSC is pulled up.

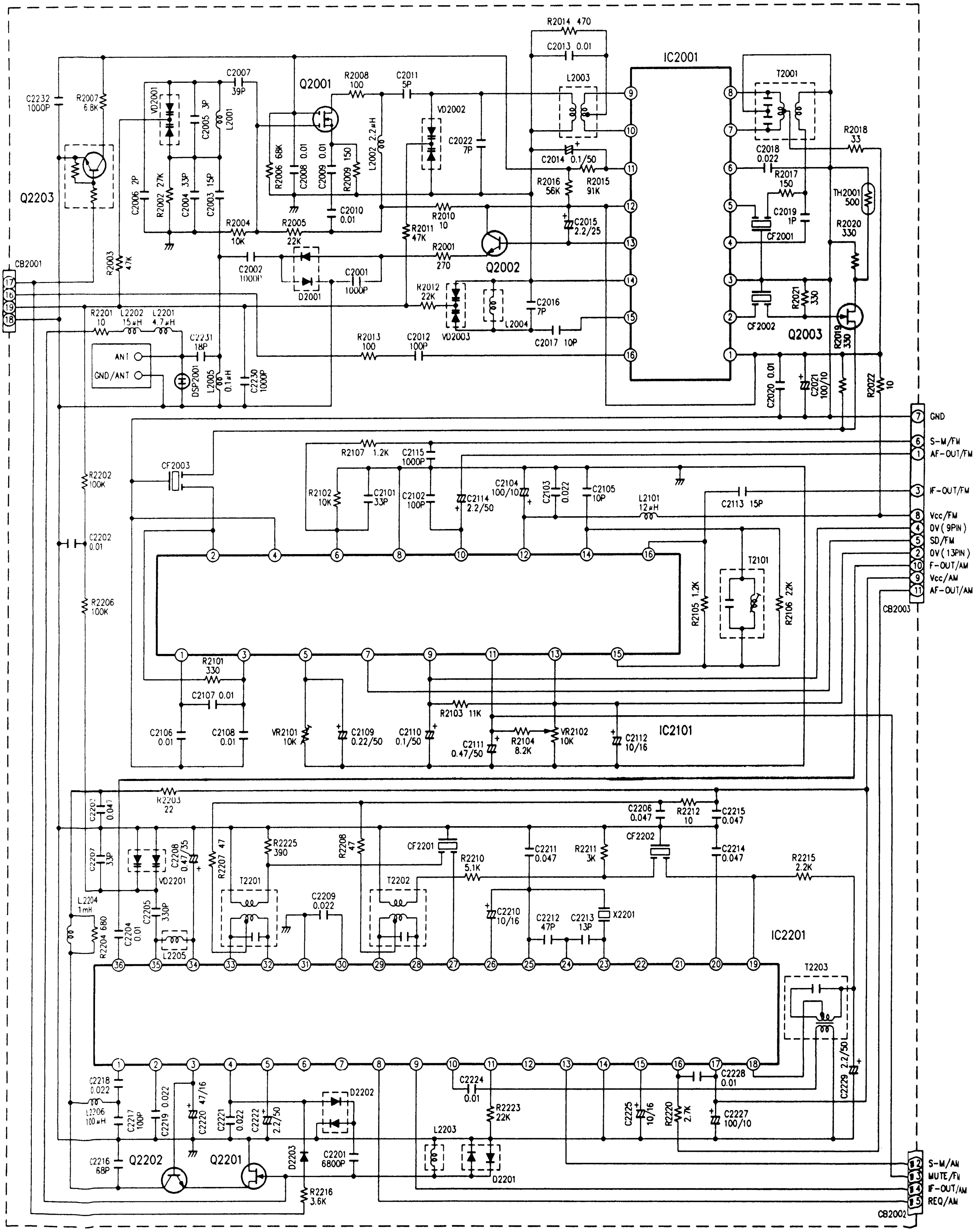
16615W31 (IC601)

No.	Symbol	I/O	Terminal Description
1	EV-DATA	O	IC206 SERIAL DATA Output.
2	EV-CLOCK	O	IC206 SERIAL CLOCK Output.
3	EV-CE	O	IC206 CE Signal Output.
4	W. DOG-OUT	O	Watch Dog Output.
5	O-REM	O	Matual Reset, OUT REMOTE Signal Output.
6	NC	—	N.C.
7	O-INT	O	Matual Reset, OUT INTERRUPT Sigunal Output.
8	GND	—	GND.
9	IN-REM	I	Mutual Reset, IN REMOTE Signal Input.
10	$\overline{\text{IN-PAUSE}}$	I	Mutual Reset, IN PAUSE Signal Input.
11	$\overline{\text{IN-INT}}$	I	Mutual Reset, IN INTERRUPT Signal Input.
12	NC	—	N.C.
13	VOL. 1	—	GND.
14	VOL. 0	—	GND.
15	AREA-1	I	Area Set Up 1 Terminal.
16	AREA-0	I	Area Set Up 0 Terminal.
17	GND	—	GND.
18	GND	—	GND.

No.	Symbol	I/O	Terminal Description
19	NC	—	N.C.
20	$\overline{\text{RESET}}$	I	System Reset Input.
21	X2	—	System Clock 2 (4.19MHz)
22	X1	—	System Clock 1 (4.19MHz)
23	NC	—	N.C.
24	ALARM	O	SDK ALARM Signal Output.
25	SDK/TONE	O	ALARM/AUDIO Switching Output.
26	$\overline{\text{CD}}$/TUNER	O	CD/TUNER AUDIO Switching Output.
27	○ GND	—	GND
	● NC	—	N.C.
28	DTS-CE	O	DTS CE Output.
29	DTS-STS	I	DTS STATUS Input.
30	DTS-CMD	O	DTS COMMAND Output.
31	DTS-CLK	I	DTS CLOCK Input.
32	DTS-START	I	DTS START Input.
33	DTS-MUTE	I	DTS MUTE Input.
34	NC	—	N.C.
35	ACC	I	ACC ON/OFF Detector.
36	BATT	I	BATT ON/OFF Detector.
37	I-BUS	I	MINI-BUS DATA Input.
38	V_{DD}	—	Power Supply Terminal. (+5V)
39	V_{DD}	—	Power Supply Terminal. (+5V)
40	○ GND	—	GND
	● NC	—	N.C.
41	$\overline{\text{PULL UP SW}}$	O	Power Supply Control to microcomputer Pull Up.
42	$\overline{\text{A-MUTE}}$	O	Signal Output.
43	POWER-ON	O	Signal Output.
44	O-BUS	O	MINI-BUS DATA Output.

Note: ○: For except Germany Model only, ●: For Germany Model only, Others: Common.

Tuner Schematic Diagram

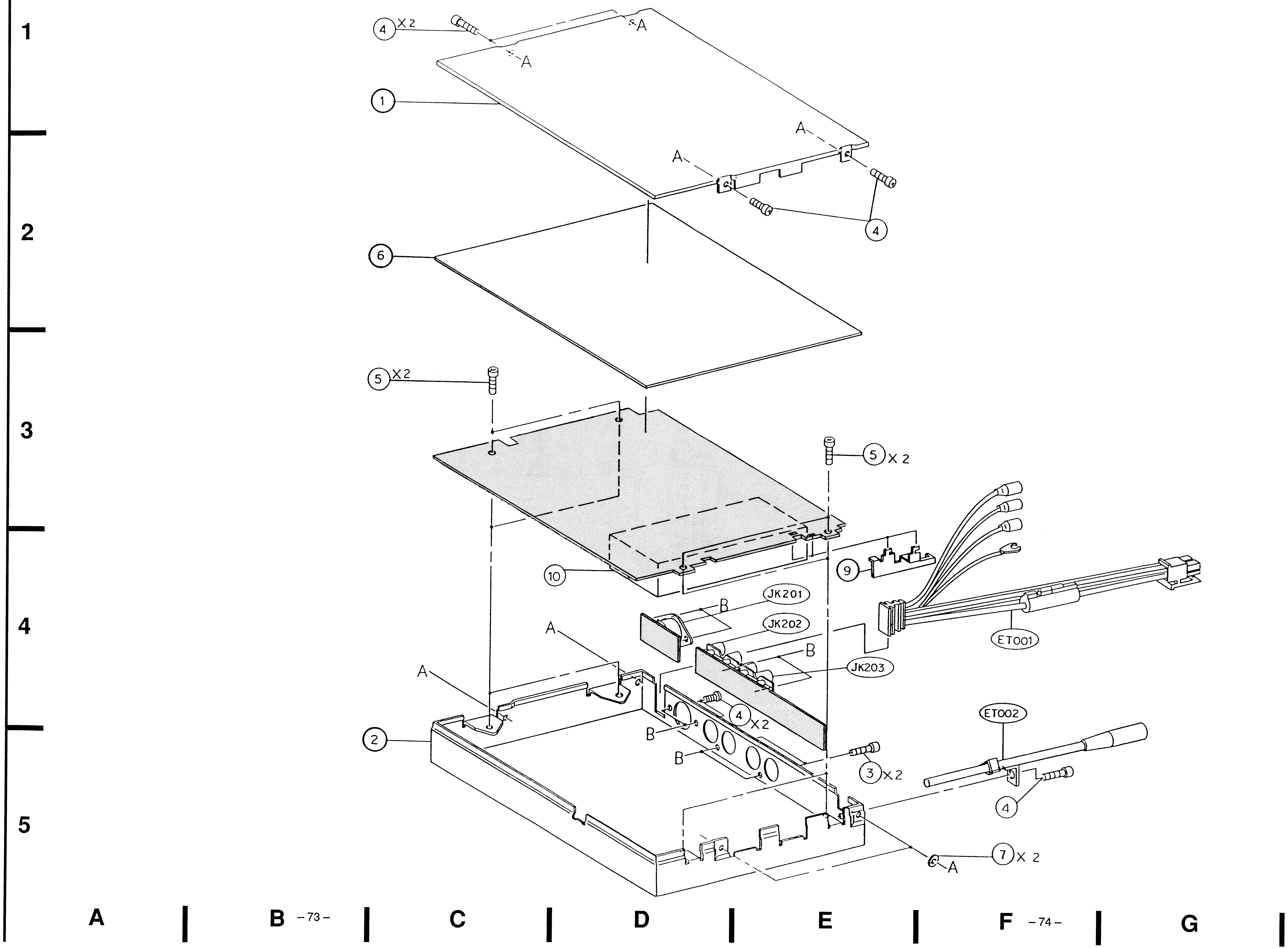

R2014 470
C2013 0.01
IC2001
L2003
T2001
C2232 1000P
R2007 6.8K
VD2001
C2007 39P
C2005 3P
L2001
Q2001
R2008 100
C2011 5P
VD2002
C2022 7P
R2018 33
Q2203
C2006 2P
R2002 27K
C2004 33P
C2003 15P
R2006 68K
C2008 0.01
C2009 0.01
R2009 150
L2002 2.2μH
C2014 0.1/50
R2016 56K
R2015 91K
C2018 0.022
R2017 150
C2019 1P
CF2001
TH2001 500
R2020 330
C2010 0.01
R2010 10
R2004 10K
R2005 22K
R2011 47K
C2015 2.2/25
R2001 270
Q2002
CB2001
R2003 47K
C2002 1000P
C2001 1000P
D2001
R2012 22K
VD2003
L2004
C2016 7P
R2021 330
CF2002
Q2003
R2019 330
L/D
F-OUT/FM
VT
GND
R2201 10
L2202 15μH
L2201 4.7μH
C2231 18P
ANT
GND/ANT
DSP2001
L2005 0.1μH
C2230 1000P
R2013 100
C2012 100P
C2017 10P
C2020 0.01
C2021 100/10
R2022 10
GND
S-M/FM
AF-OUT/FM
IF-OUT/FM
Vcc/FM
0V (9PIN)
SD/FM
0V (13PIN)
F-OUT/AM
Vcc/AM
AF-OUT/AM
CB2003
CF2003
R2202 100K
R2107 1.2K
C2115 1000P
C2104 100/10
C2103 0.022
C2105 10P
R2102 10K
C2101 33P
C2102 100P
C2114 2.2/50
L2101 12μH
C2113 15P
C2202 0.01
T2101
R2105 1.2K
R2106 22K
R2206 100K
R2101 330
C2107 0.01
C2106 0.01
C2108 0.01
VR2101 10K
C2109 0.22/50
C2110 0.1/50
R2103 11K
C2111 0.47/50
R2104 8.2K
VR2102 10K
C2112 10/16
IC2101
C2203 0.047
R2203 22
C2206 0.047
R2212 10
C2215 0.047
C2207 33P
C2208 0.47/35
VD2201
R2207 47
R2225 390
R2208 47
CF2201
R2210 5.1K
C2211 0.047
R2211 3K
CF2202
C2214 0.047
R2215 2.2K
L2204 1mH
R2204 680
C2204 0.01
C2205 330P
L2205
T2201
C2209 0.022
T2202
C2210 10/16
C2212 47P
C2213 13P
X2201
IC2201
T2203
C2218 0.022
L2206 100μH
C2217 100P
C2219 0.022
C2220 47/16
C2221 0.022
C2222 2.2/50
D2202
C2224 0.01
R2223 22K
C2225 10/16
R2220 2.7K
C2227 100/10
C2228 0.01
C2229 2.2/50
C2216 68P
Q2202
Q2201
D2203
C2201 6800P
R2216 3.6K
L2203
D2201
S-M/AM
MUTE/FM
IF-OUT/AM
REQ/AM
CB2002

Cabinet Assembly Parts List

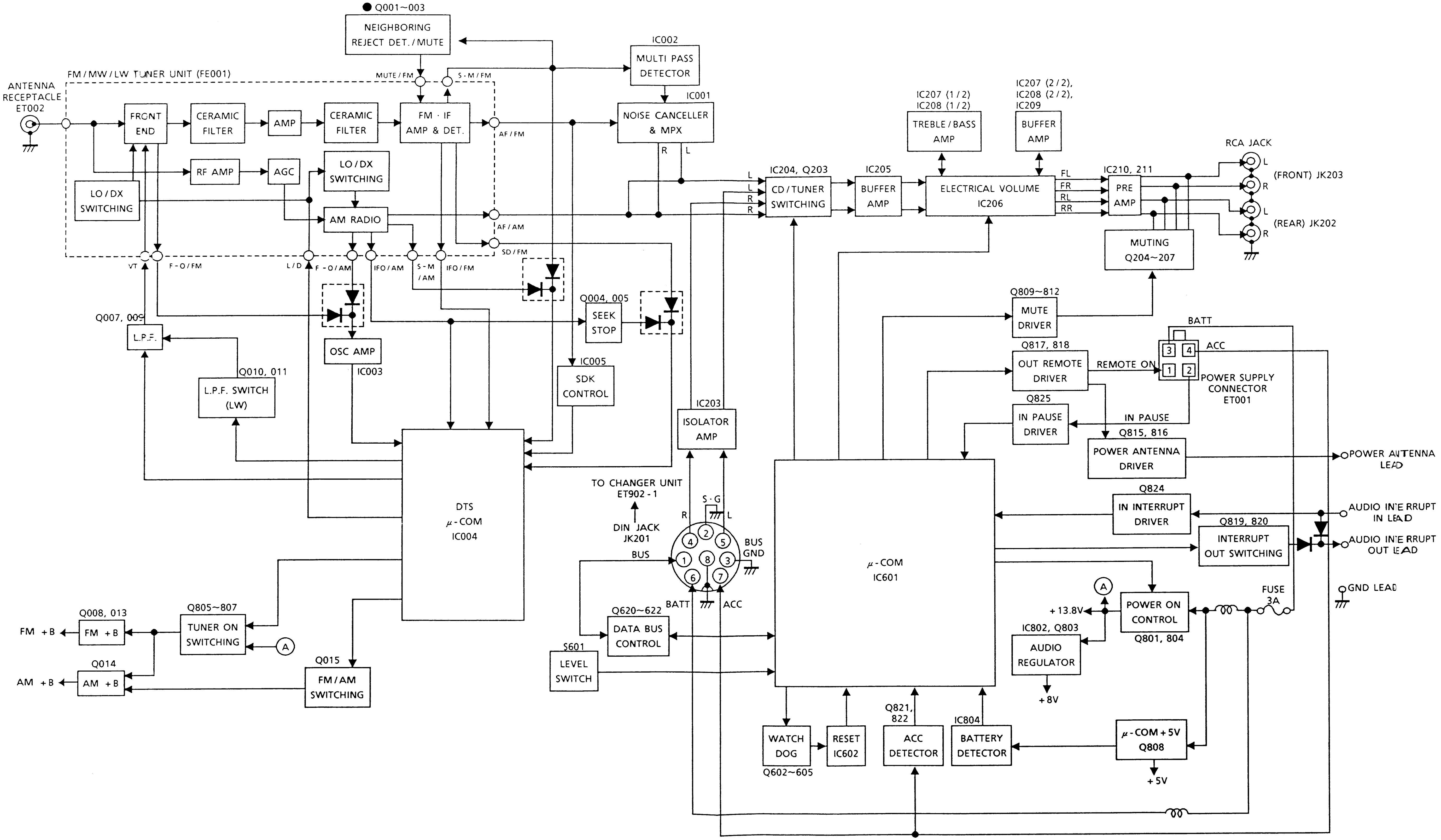
Note : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description	Symbol No.	Index	Part No.	Description
3	4-E	03S68555F13	Screw, Pan (M3 x 10)				
4		03S44205G34	Screw, Pan (M2.6 x 5)				
5		03S44205G48	Screw, Pan (M2.6 x 5)				
7	5-F	04A66026F04	Washer, Polyslider (M3.2)				
10	4-D	77C30794W01	FM/MW/LW Tuner, MB4R901B (FE001)				

Exploded View (Tuner Unit)

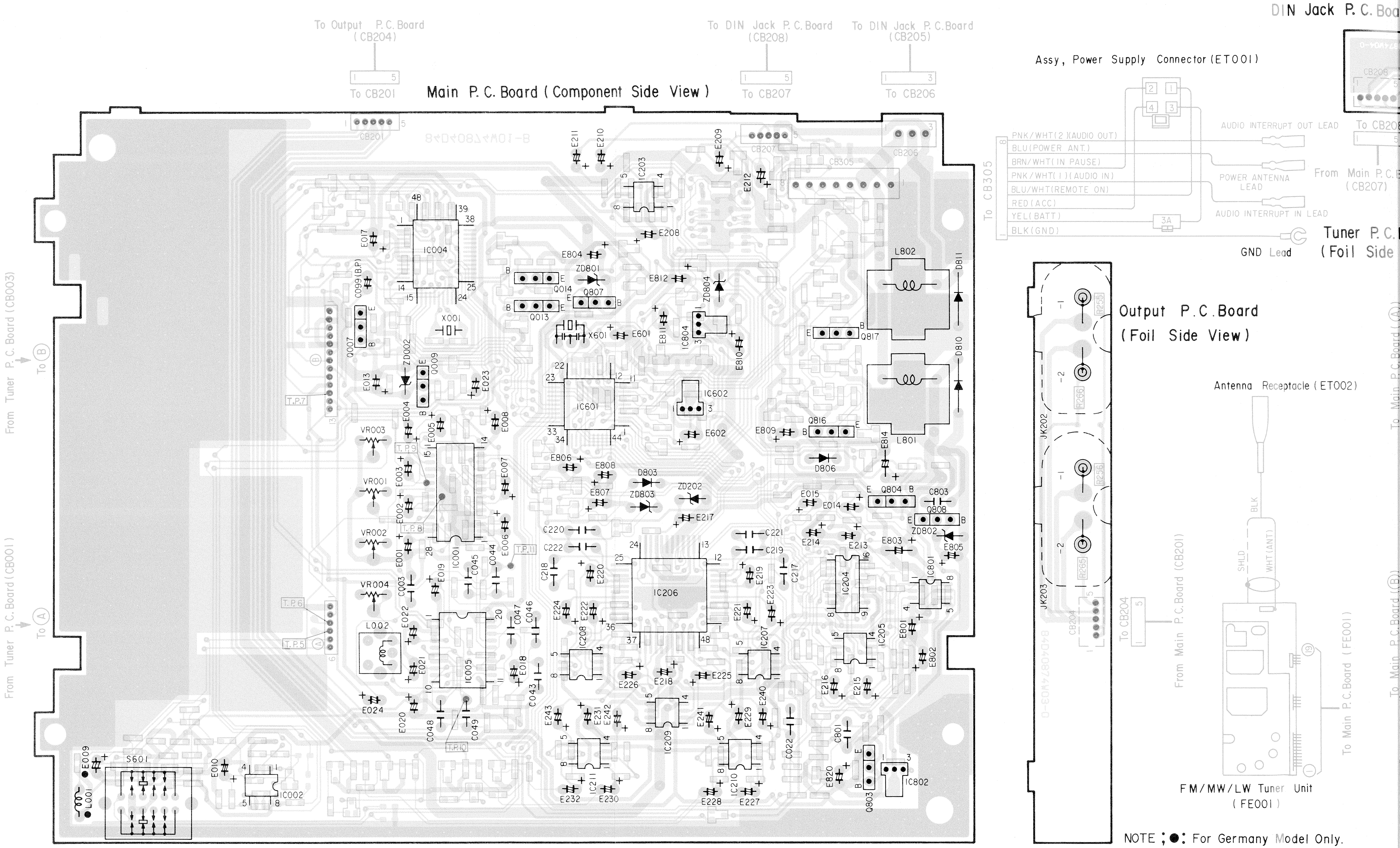

1
2
3
4
5
4 X2
A
A
1
A
A
4
6
5 X2
5 X2
10
9
JK201
B
JK202
B
JK203
ET001
A
A
2
4 X2
B
B
3 X2
ET002
4
7 X2
A
A
B
C
D
E
F
G

Block Diagram


● Q001~003
NEIGHBORING REJECT DET./MUTE
FM/MW/LW TUNER UNIT (FE001)
ANTENNA RECEPTACLE ET002
FRONT END
CERAMIC FILTER
AMP
CERAMIC FILTER
FM · IF AMP & DET.
MUTE/FM
S-M/FM
AF/FM
RF AMP
AGC
LO/DX SWITCHING
LO/DX SWITCHING
AM RADIO
AF/AM
SD/FM
VT
F-O/FM
L/D
F-O/AM
IFO/AM
S-M /AM
IFO/FM
Q007, 009
L.P.F.
Q010, 011
L.P.F. SWITCH (LW)
OSC AMP
IC003
Q004, 005
SEEK STOP
IC005
SDK CONTROL
DTS μ-COM IC004
IC002
MULTI PASS DETECTOR
IC001
NOISE CANCELLER & MPX
R
L
IC204, Q203
CD/TUNER SWITCHING
IC205
BUFFER AMP
IC207 (1/2) IC208 (1/2)
TREBLE/BASS AMP
IC207 (2/2), IC208 (2/2), IC209
BUFFER AMP
ELECTRICAL VOLUME IC206
FL
FR
RL
RR
IC210, 211
PRE AMP
MUTING Q204~207
RCA JACK
(FRONT) JK203
(REAR) JK202
IC203
ISOLATOR AMP
TO CHANGER UNIT ET902-1
DIN JACK JK201
S·G
BUS
BUS GND
BATT
ACC
Q620~622
DATA BUS CONTROL
S601
LEVEL SWITCH
μ-COM IC601
Q809~812
MUTE DRIVER
Q817, 818
OUT REMOTE DRIVER
REMOTE ON
Q825
IN PAUSE DRIVER
IN PAUSE
Q815, 816
POWER ANTENNA DRIVER
BATT
ACC
POWER SUPPLY CONNECTOR ET001
POWER ANTENNA LEAD
Q824
IN INTERRUPT DRIVER
Q819, 820
INTERRUPT OUT SWITCHING
AUDIO INTERRUPT IN LEAD
AUDIO INTERRUPT OUT LEAD
GND LEAD
FUSE 3A
A
POWER ON CONTROL
Q801, 804
+13.8V
IC802, Q803
AUDIO REGULATOR
+8V
μ-COM+5V Q808
+5V
WATCH DOG
Q602~605
RESET IC602
Q821, 822
ACC DETECTOR
IC804
BATTERY DETECTOR
Q008, 013
FM +B
FM +B
Q014
AM +B
AM +B
Q805~807
TUNER ON SWITCHING
A
Q015
FM/AM SWITCHING

Notes : ● : For Germany Model only, Others : Common.

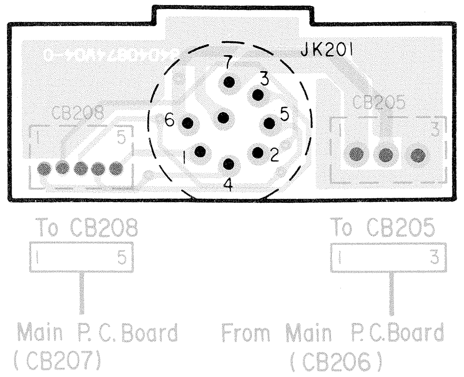
Parts Layout on P.C. Boards and Wiring Diagram

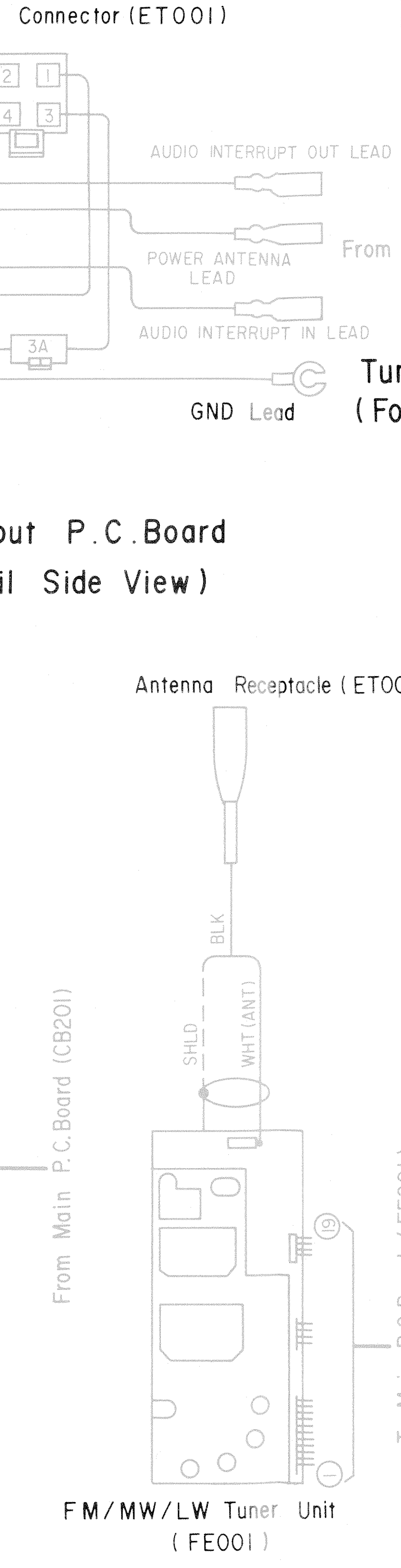

To Output P.C.Board (CB204)
To CB201
Main P. C. Board (Component Side View)
To DIN Jack P. C. Board (CB208)
To CB207
To DIN Jack P. C. Board (CB205)
To CB206
CB201
CB207
CB206
CB305
From Tuner P. C. Board (CB003)
To B
From Tuner P. C. Board (CB001)
To A
T.P.5
T.P.6
T.P.7
T.P.8
T.P.9
T.P.10
T.P.11
IC001
IC002
IC004
IC005
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC210
IC211
IC601
IC602
IC801
IC802
Q007
Q009
Q013
Q014
Q803
Q804
Q807
Q808
Q816
Q817
X001
X601
VR001
VR002
VR003
VR004
L001
L002
L801
L802
S601
ZD002
ZD202
ZD801
ZD802
ZD803
ZD804
D803
D806
D810
D811
C003
C022
C043
C044
C045
C046
C047
C048
C049
C099 (B.P)
C217
C218
C219
C220
C221
C222
C801
C803
Assy, Power Supply Connector (ET001)
To CB305
PNK/WHT(2)(AUDIO OUT)
BLU(POWER ANT.)
BRN/WHT(IN PAUSE)
PNK/WHT(1)(AUDIO IN)
BLU/WHT(REMOTE ON)
RED(ACC)
YEL(BATT)
BLK(GND)
3A
AUDIO INTERRUPT OUT LEAD
POWER ANTENNA LEAD
AUDIO INTERRUPT IN LEAD
GND Lead
DIN Jack P. C. Boa
CB206
To CB20
From Main P.C. (CB207)
Tuner P.C.
(Foil Side
Output P.C Board
(Foil Side View)
JK202
JK203
R255
R256
R265
R266
CB204
To CB204
From Main P.C.Board (CB201)
Antenna Receptacle (ET002)
BLK
SHLD
WHT(ANT)
FM/MW/LW Tuner Unit
(FE001)
To Main P.C.Board (FE001)
To Main P.C.Board (A)
To Main P.C.Board (B)

NOTE ; ●: For Germany Model Only.
Others : Common.

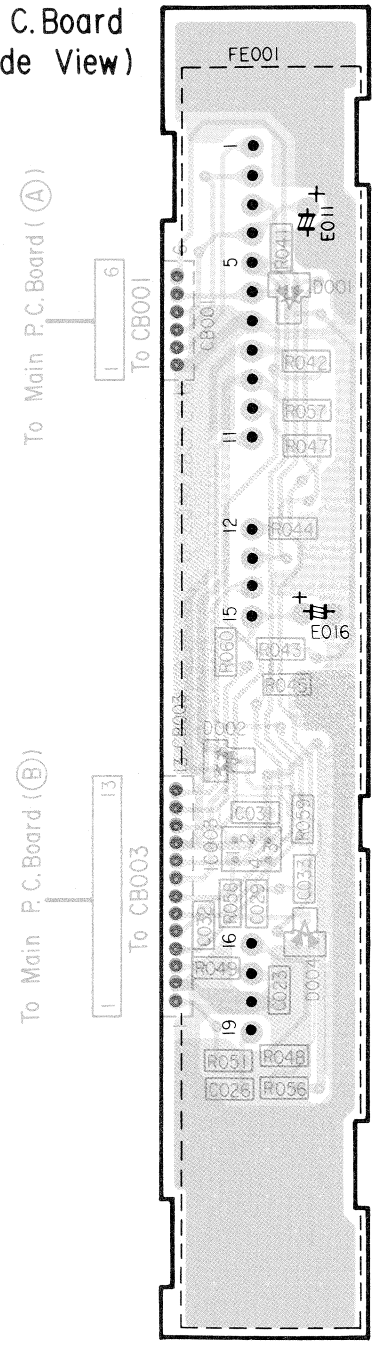
Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

DIN Jack P.C. Board (Foil Side View)


JK201
CB208
CB205
1
2
3
4
5
6
7
To CB208
To CB205
From Main P.C. Board (CB207)
From Main P.C.Board (CB206)

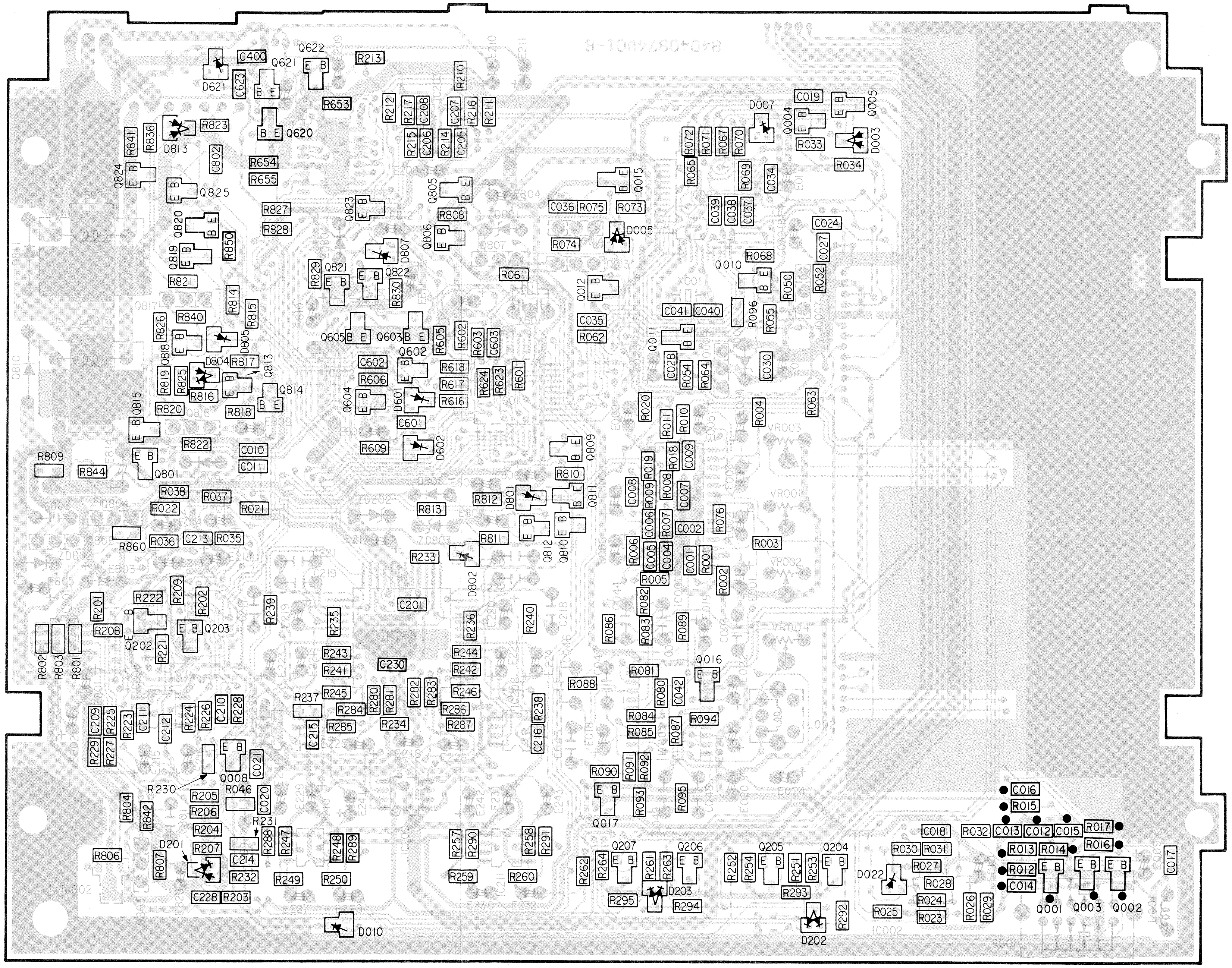

Connector (ET001)
AUDIO INTERRUPT OUT LEAD
POWER ANTENNA LEAD
AUDIO INTERRUPT IN LEAD
3A
GND Lead
Antenna Receptacle (ET002)
BLK
SHLD
WHT(ANT)
From Main P.C.Board (CB201)
To Main P.C.Board (FE001)
FM/MW/LW Tuner Unit (FE001)

Tuner P.C. Board (Foil Side View)


FE001
E011
E016
D001
D002
D003
D004
R041
R042
R057
R047
R044
R043
R045
R060
R059
R031
R033
R056
R029
R032
R049
R023
R051
R048
R026
R058
IC003
CB001
CB003
1
5
11
12
15
16
19
To Main P.C.Board (A)
To CB001
To Main P.C.Board (B)
To CB003
6
1
13
1

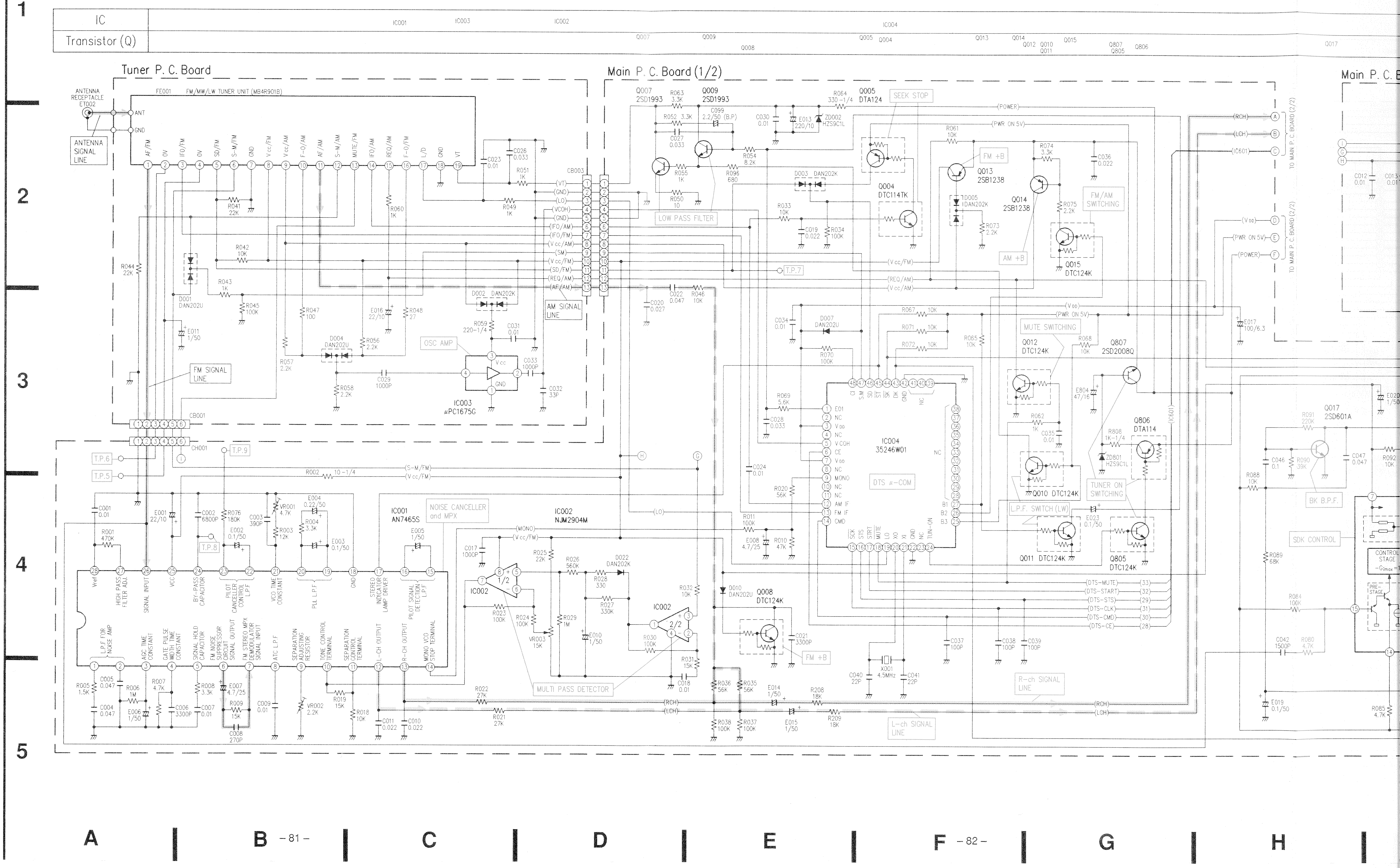
out P.C.Board
il Side View)

Main P.C. Board (Foil Side View)

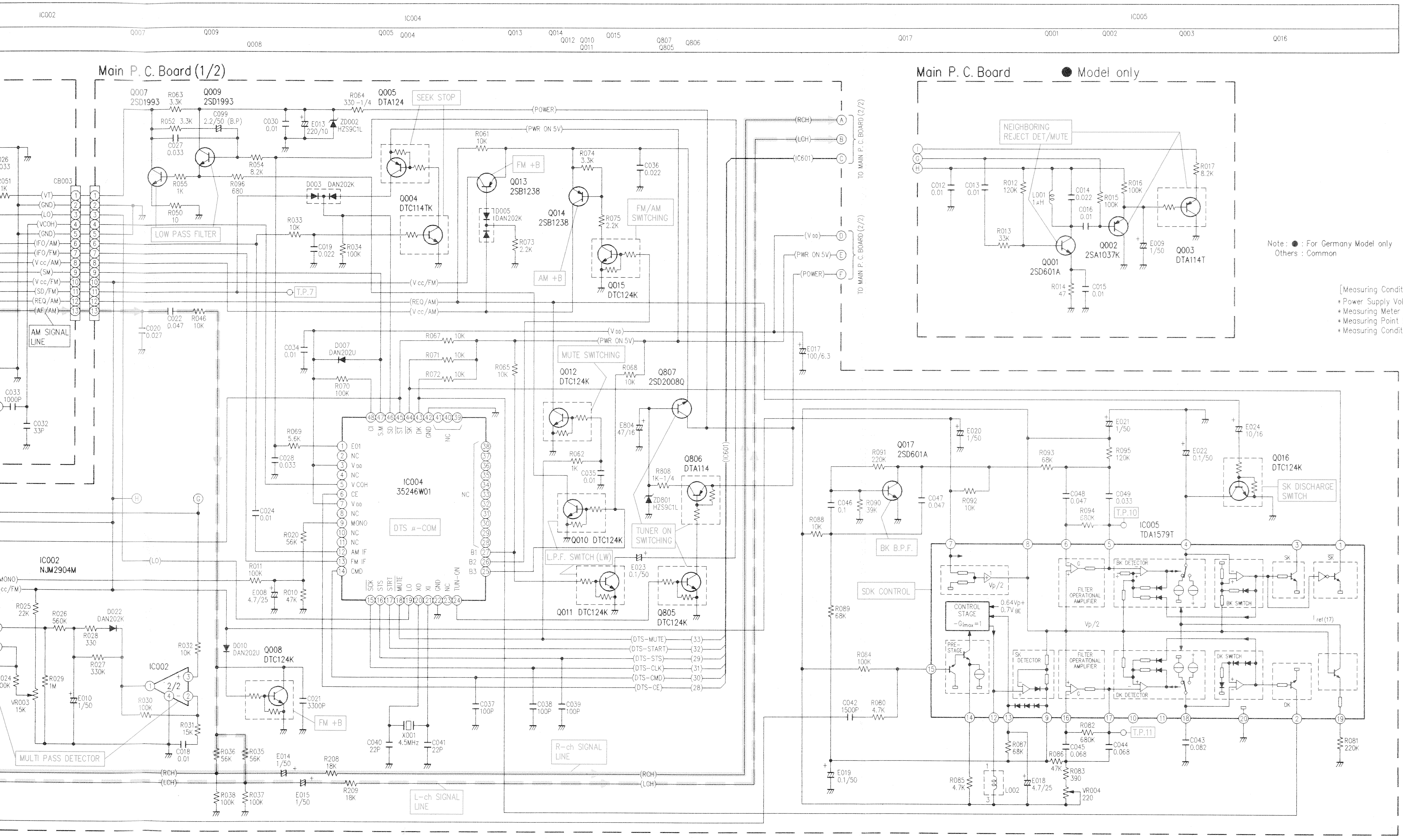

84D0874W01-B
D621
C400
C623
Q621
Q622
R213
R653
Q620
R823
D813
R841
R836
C802
R654
R655
Q824
Q825
R827
R828
Q820
Q819
R850
R821
R840
R826
R814
R815
D804
D805
R817
Q813
Q814
R816
R818
R819
R825
Q815
R820
R822
C010
C011
R809
R844
Q801
R038
R037
R022
R021
R036
C213
R035
R860
R222
R209
R202
R201
R208
Q202
Q203
R221
R239
R235
R802
R803
R801
R229
C209
R227
R225
R223
C211
C212
R224
R226
C210
R228
R230
Q008
R205
R046
R206
C020
R204
R231
R207
C214
R288
R247
D201
R232
C228
R203
R249
R250
R804
R842
R806
R807
D010
R243
R241
C230
R237
R245
R284
R280
R281
R282
R283
C215
R285
R234
C201
R244
R242
R246
R286
R287
R236
R240
R238
C216
R212
R217
C208
R215
C206
R214
C205
C207
R216
R211
R210
Q805
R808
Q823
D807
Q806
Q822
Q821
R829
R830
R061
Q012
Q605
Q603
Q602
R605
R602
R603
C603
C602
R606
R618
R617
R616
R624
R623
R601
Q604
D601
C601
R609
D602
R813
R812
R811
D801
R810
Q809
Q811
Q812
Q810
R233
D802
Q015
C036
R075
R073
D005
R074
C035
R062
Q011
C028
R054
R064
R020
R011
R010
R019
R018
C009
C008
R009
R008
C007
C006
R007
C002
R076
R006
C005
C004
C001
R001
R005
R002
R003
R082
R083
R086
R089
R081
R080
C042
R088
Q016
R084
R085
R087
R094
R090
R091
R092
R093
R095
Q017
R072
R071
R067
R070
R065
R069
C034
C039
C038
C037
D007
Q004
Q005
C019
R033
D003
R034
C024
C027
R068
Q010
R050
R052
C041
C040
R096
R055
C030
R004
R063
VR003
VR001
VR002
VR004
C016
R015
C013
C012
C015
R017
R016
R013
R014
R012
C014
Q001
Q003
Q002
C017
C018
R032
R030
R031
R027
R028
R024
R023
R025
R026
R029
D022
Q204
Q205
Q206
Q207
R252
R254
R251
R253
R293
R292
D202
R262
R264
R261
R263
D203
R295
R294
R257
R290
R258
R291
R259
R260
S601
IC206
IC602

E ; ●: For Germany Model Only.
Others : Common.

Schematic Diagram (1/2)



IC
Transistor (Q)
IC001
IC003
IC002
IC004
Q007
Q009
Q008
Q005
Q004
Q013
Q014
Q012
Q010
Q011
Q015
Q807
Q805
Q806
Q017
Tuner P. C. Board
Main P. C. Board (1/2)
Main P. C. B
ANTENNA RECEPTACLE ET002
ANTENNA SIGNAL LINE
FE001 FM/MW/LW TUNER UNIT (MB4R901B)
FM SIGNAL LINE
AM SIGNAL LINE
OSC AMP
IC003 µPC1675G
CB003
CB001
CH001
T.P.6
T.P.5
T.P.7
T.P.8
T.P.9
LOW PASS FILTER
SEEK STOP
FM +B
AM +B
FM/AM SWITCHING
MUTE SWITCHING
TUNER ON SWITCHING
L.P.F. SWITCH (LW)
BK B.P.F.
SDK CONTROL
Q007 2SD1993
Q009 2SD1993
Q005 DTA124
Q004 DTC114TK
Q013 2SB1238
Q014 2SB1238
Q015 DTC124K
Q012 DTC124K
Q807 2SD2008Q
Q806 DTA114
Q010 DTC124K
Q011 DTC124K
Q805 DTC124K
Q008 DTC124K
Q017 2SD601A
IC004 35246W01
DTS µ-COM
X001 4.5MHz
IC001 AN7465S
NOISE CANCELLER and MPX
IC002 NJM2904M
MULTI PASS DETECTOR
R-ch SIGNAL LINE
L-ch SIGNAL LINE
TO MAIN P. C. BOARD (2/2)
CONTROL STAGE
PRE-STAGE
1
2
3
4
5
A
B
C
D
E
F
G
H


IC002
IC004
IC005
Q007
Q009
Q008
Q005
Q004
Q013
Q014
Q012
Q010
Q011
Q015
Q807
Q805
Q806
Q017
Q001
Q002
Q003
Q016
Main P. C. Board (1/2)
Q007 2SD1993
R063 3.3K
Q009 2SD1993
R064 330-1/4
Q005 DTA124
SEEK STOP
(POWER)
(PWR ON 5V)
R052 3.3K
C099 2.2/50 (B.P)
C030 0.01
E013 220/10
ZD002 HZS9C1L
C027 0.033
R054 8.2K
R055 1K
R096 680
R050 10
LOW PASS FILTER
CB003
(VT)
(GND)
(LO)
(VCOH)
(GND)
(IFO/AM)
(IFO/FM)
(Vcc/AM)
(SM)
(Vcc/FM)
(SD/FM)
(REQ/AM)
(AF/AM)
AM SIGNAL LINE
C020 0.027
C022 0.047
R046 10K
C033 1000P
C032 33P
R061 10K
FM +B
Q013 2SB1238
Q004 DTC114TK
D003 DAN202K
D005 DAN202K
R073 2.2K
R033 10K
C019 0.022
R034 100K
R074 3.3K
C036 0.022
Q014 2SB1238
FM/AM SWITCHING
R075 2.2K
AM +B
Q015 DTC124K
T.P.7
(Vcc/FM)
(REQ/AM)
(Vcc/AM)
(Vdd)
(PWR ON 5V)
(RCH)
(LCH)
(IC601)
TO MAIN P. C. BOARD (2/2)
(Vdd)
(PWR ON 5V)
(POWER)
C034 0.01
D007 DAN202U
R067 10K
R071 10K
R072 10K
R070 100K
R065 10K
MUTE SWITCHING
R068 10K
Q807 2SD2008Q
Q012 DTC124K
E017 100/6.3
E804 47/16
R069 5.6K
C028 0.033
IC004 35246W01
DTS μ-COM
E01
NC
Vdd
V COH
CE
MONO
AM IF
FM IF
CMD
B1
B2
B3
R062 1K
C035 0.01
R808 1K-1/4
ZD801 HZS9C1L
Q806 DTA114
Q010 DTC124K
TUNER ON SWITCHING
L.P.F. SWITCH (LW)
E023 0.1/50
Q011 DTC124K
Q805 DTC124K
C024 0.01
R020 56K
R011 100K
E008 4.7/25
R010 47K
IC002 NJM2904M
R025 22K
R026 560K
D022 DAN202K
R028 330
R027 330K
R029 1M
R032 10K
D010 DAN202U
Q008 DTC124K
C021 3300P
FM +B
VR003 15K
E010 1/50
R030 100K
R031 15K
C018 0.01
MULTI PASS DETECTOR
R036 56K
R035 56K
E014 1/50
R208 18K
E015 1/50
R209 18K
R038 100K
R037 100K
(RCH)
(LCH)
L-ch SIGNAL LINE
R-ch SIGNAL LINE
C037 100P
C038 100P
C039 100P
X001 4.5MHz
C040 22P
C041 22P
(DTS-MUTE) (33)
(DTS-START) (32)
(DTS-STS) (29)
(DTS-CLK) (31)
(DTS-CMD) (30)
(DTS-CE) (28)
Main P. C. Board
● Model only
NEIGHBORING REJECT DET/MUTE
R017 8.2K
C012 0.01
C013 0.01
R012 120K
L001 1μH
C014 0.022
C016 0.01
R015 100K
R016 100K
R013 33K
Q001 2SD601A
Q002 2SA1037K
E009 1/50
Q003 DTA114T
R014 47
C015 0.01
Q017 2SD601A
R091 220K
E020 1/50
R093 68K
E021 1/50
R095 120K
E022 0.1/50
E024 10/16
Q016 DTC124K
SK DISCHARGE SWITCH
C046 0.1
R090 39K
C047 0.047
R092 10K
C048 0.047
C049 0.033
R094 680K
T.P.10
IC005 TDA1579T
R088 10K
BK B.P.F.
SDK CONTROL
R089 68K
CONTROL STAGE
PRE-STAGE
SK DETECTOR
FILTER OPERATIONAL AMPLIFIER
BK DETECTOR
BK SWITCH
DK SWITCH
DK DETECTOR
R084 100K
C042 1500P
R080 4.7K
R082 680K
C045 0.068
R086 47K
T.P.11
C044 0.068
C043 0.082
R081 220K
R087 68K
R083 390
VR004 220
E018 4.7/25
R085 4.7K
L002
E019 0.1/50

Note : ● : For Germany Model only
Others : Common

	E	C	B
Q001	0.89V	8.28V	1.51V
Q002	0.63V	0V	0.07V
Q003	0V	0V	0V
Q004	0V	0V	0V
Q005	5.05V	PS	0V
Q007	0V	3.3V	0.62V
Q008	0V	0V	8.56V
Q009	0.62V	9.29V	1.17V
Q010	0V	0V	4.94V
Q011	0V	PS	0.25V
Q012	0V	0V	4.88V
Q013	8.66V	8.57V	7.95V
Q014	8.66V	0.5V	8.66V
Q015	0V	8.65V	0V
Q016	0V	0V	0V
Q017	0V	4.19V	0.59V
Q805	0V	0.01V	5.07V
Q806	13.77V	13.73V	0.01V
Q807	8.66V	13.77V	9.29V

[Measuring Conditions]
* Power Supply Voltage : D C 14V
* Measuring Meter : Digital Multi Voltmeter
* Measuring Point Reference : Between Ground
* Measuring Conditions : No signal input
FM : 98.1MHz
MW : 999kHz
LW : 216kHz

IC001

1	2.39V	15	2.44V
2	1.79V	16	2.44V
3	1.36V	17	3.66V
4	0V	18	0V
5	2.5V	19	2.45V
6	1.3V	20	2.45V
7	1.18V	21	1.38V
8	1.18V	22	2.4V
9	0.25V	23	2.41V
10	5.84V	24	2.46V
11	2.34V	25	8.4V
12	3.16V	26	2.45V
13	3.15V	27	2.33V
14	0V	28	2.47V

IC002

1	6.28V
2	6.28V
3	6.28V
4	0V
5	3.19V
6	3.34V
7	5.84V
8	8.54V

IC003

1	4.39V
2	1.02V
3	0V
4	3.62V

IC004

1	1.18V	17	0.52V	33	–
2	–	18	5.04V	34	–
3	5.06V	19	0V	35	–
4	–	20	2.52V	36	–
5	1.95V	21	2.4V	37	–
6	0V	22	0V	38	–
7	5.06V	23	–	39	–
8	–	24	0V	40	–
9	0V	25	5.06V	41	–
10	–	26	0V	42	0V
11	–	27	0.28V	43	3.68V
12	0V	28	–	44	3.67V
13	0V	29	–	45	3.66V
14	0V	30	–	46	4.1V
15	0V	31	–	47	5.56V
16	0.45V	32	–	48	5.01V

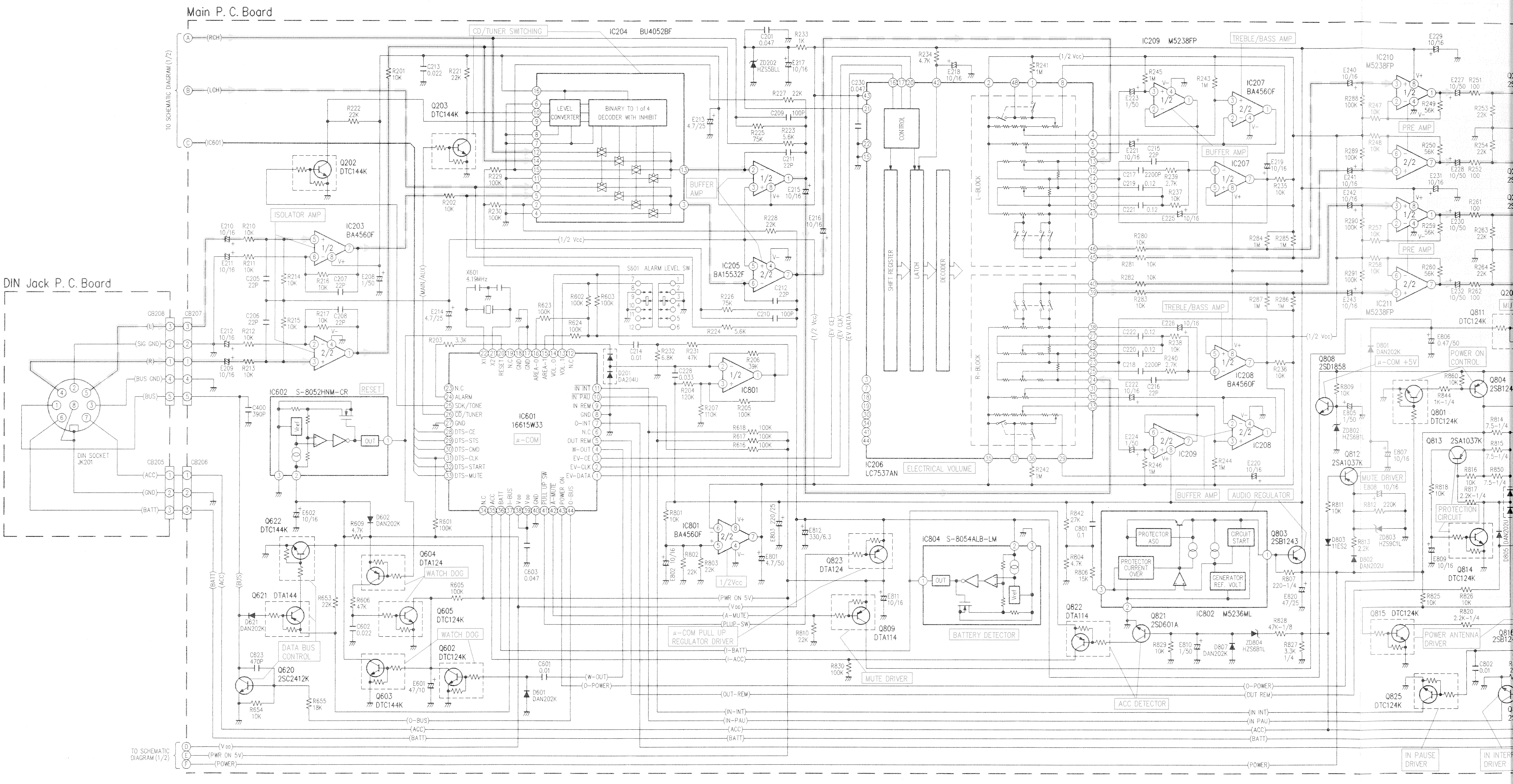
IC005

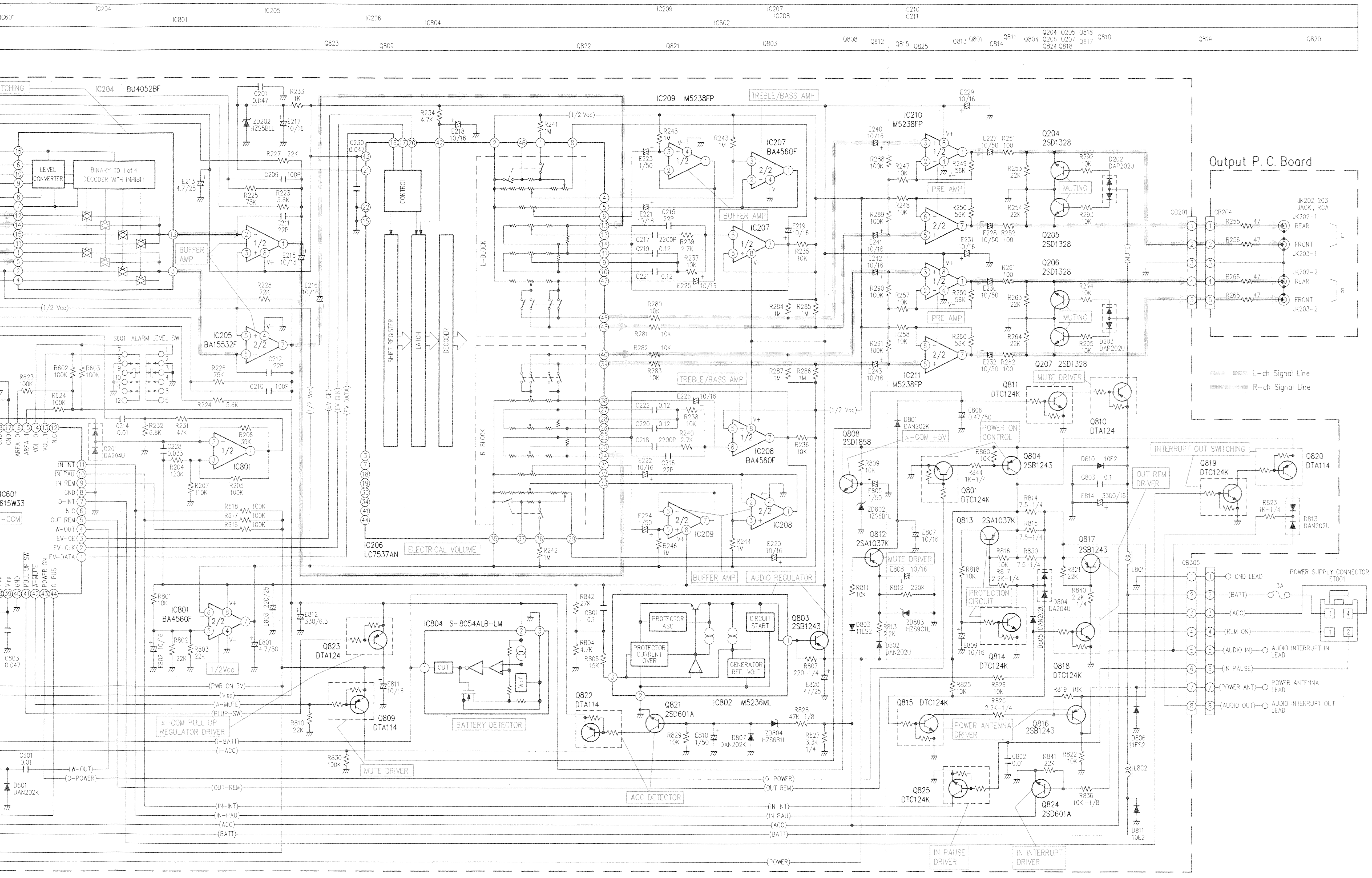
1	3.76V	11	0V
2	0.1V	12	4.36V
3	0V	13	0V
4	0V	14	4.24V
5	4.35V	15	4.32V
6	4.35V	16	0V
7	8.71V	17	4.35V
8	4.35V	18	0V
9	PS	19	0V
10	0V	20	0V

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (2/2)

IC	IC602, IC203, IC601, IC204, IC801, IC205, IC206, IC804, IC209, IC802, IC207, IC208, IC210, IC211
Transistor (Q)	Q622, Q621, Q620, Q202, Q603, Q604, Q605, Q602, Q203, Q823, Q809, Q822, Q821, Q803, Q808, Q812, Q815, Q825, Q813, Q801, Q814, Q811, Q804


Main P. C. Board
DIN Jack P. C. Board
TO SCHEMATIC DIAGRAM (1/2)
(RCH)
(LCH)
(IC601)
CD/TUNER SWITCHING
IC204 BU4052BF
LEVEL CONVERTER
BINARY TO 1 of 4 DECODER WITH INHIBIT
Q203 DTC144K
Q202 DTC144K
ISOLATOR AMP
IC203 BA4560F
BUFFER AMP
IC205 BA15532F
IC209 M5238FP
TREBLE/BASS AMP
IC207 BA4560F
IC210 M5238FP
PRE AMP
IC211 M5238FP
IC208 BA4560F
CONTROL
SHIFT REGISTER
LATCH
DECODER
L-BLOCK
R-BLOCK
IC206 LC7537AN
ELECTRICAL VOLUME
S601 ALARM LEVEL SW
X601 4.19MHz
IC601 16615W33
μ-COM
IC801
IC602 S-8052HNM-CR
RESET
DIN SOCKET JK201
(SIG GND)
(BUS GND)
(BUS)
(ACC)
(GND)
(BATT)
Q622 DTC144K
Q621 DTA144
DATA BUS CONTROL
Q620 2SC2412K
Q604 DTA124
WATCH DOG
Q605 DTC124K
Q602 DTC124K
Q603 DTC144K
IC801 BA4560F
1/2Vcc
μ-COM PULL UP REGULATOR DRIVER
Q823 DTA124
Q809 DTA114
MUTE DRIVER
IC804 S-8054ALB-LM
BATTERY DETECTOR
Q822 DTA114
Q821 2SD601A
ACC DETECTOR
IC802 M5236ML
PROTECTOR ASO
PROTECTOR CURRENT OVER
CIRCUIT START
GENERATOR REF VOLT
AUDIO REGULATOR
Q803 2SB1243
Q808 2SD1858
Q812 2SA1037K
MUTE DRIVER
Q811 DTC124K
POWER ON CONTROL
Q804 2SB1243
Q801 DTC124K
Q813 2SA1037K
PROTECTION CIRCUIT
Q814 DTC124K
Q815 DTC124K
POWER ANTENNA DRIVER
Q825 DTC124K
IN PAUSE DRIVER
IN INTER DRIVER
(Vdd)
(PWR ON 5V)
(POWER)
1
2
3
4
5
A
B
C
D
E
F
G
H


IC601
IC204
IC801
IC205
IC206
IC804
IC209
IC802
IC207
IC208
IC210
IC211
IC204 BU4052BF
LEVEL CONVERTER
BINARY TO 1 of 4 DECODER WITH INHIBIT
BUFFER AMP
IC205 BA15532F
S601 ALARM LEVEL SW
IC209 M5238FP
TREBLE/BASS AMP
IC207 BA4560F
BUFFER AMP
CONTROL
SHIFT REGISTER
LATCH
DECODER
L-BLOCK
R-BLOCK
IC206 LC7537AN
ELECTRICAL VOLUME
IC208 BA4560F
AUDIO REGULATOR
IC210 M5238FP
PRE AMP
IC211 M5238FP
Q204 2SD1328
Q205 2SD1328
Q206 2SD1328
Q207 2SD1328
MUTING
MUTE
Output P. C. Board
JK202, 203 JACK, RCA
REAR
FRONT
L
R
L-ch Signal Line
R-ch Signal Line
Q811 DTC124K
MUTE DRIVER
Q810 DTA124
Q808 2SD1858
μ-COM +5V
POWER ON CONTROL
Q804 2SB1243
Q801 DTC124K
OUT REM DRIVER
INTERRUPT OUT SWITCHING
Q819 DTC124K
Q820 DTA114
Q813 2SA1037K
Q812 2SA1037K
MUTE DRIVER
PROTECTION CIRCUIT
Q814 DTC124K
Q817 2SB1243
Q818 DTC124K
Q815 DTC124K
POWER ANTENNA DRIVER
Q816 2SB1243
Q825 DTC124K
Q824 2SD601A
IN PAUSE DRIVER
IN INTERRUPT DRIVER
IC801 BA4560F
1/2Vcc
IC804 S-8054ALB-LM
BATTERY DETECTOR
Q823 DTA124
Q809 DTA114
MUTE DRIVER
μ-COM PULL UP REGULATOR DRIVER
PROTECTOR ASO
PROTECTOR CURRENT OVER
CIRCUIT START
GENERATOR REF. VOLT
IC802 M5236ML
Q803 2SB1243
Q822 DTA114
Q821 2SD601A
ACC DETECTOR
CB201
CB204
CB305
POWER SUPPLY CONNECTOR ET001
GND LEAD
AUDIO INTERRUPT IN LEAD
POWER ANTENNA LEAD
AUDIO INTERRUPT OUT LEAD
(BATT)
(ACC)
(REM ON)
(AUDIO IN)
(IN PAUSE)
(POWER ANT)
(AUDIO OUT)
(POWER)

IC206

1	3.95V	17	0V	33	4.35V
2	4.35V	18	0V	34	–
3	–	19	8.35V	35	4.35V
4	4.35V	20	0V	36	3.96V
5	4.35V	21	5V	37	–
6	4.35V	22	0V	38	4.34V
7	–	23	4.35V	39	4.35V
8	4.35V	24	4.35V	40	4.34V
9	4.35V	25	4.35V	41	–
10	4.35V	26	4.35V	42	8.35V
11	4.35V	27	4.35V	43	8.34V
12	4.35V	28	4.35V	44	–
13	4.35V	29	4.35V	45	4.34V
14	4.35V	30	–	46	4.34V
15	0V	31	4.35V	47	4.34V
16	0V	32	4.34V	48	–

IC601

1	0V	17	0V	33	5.04V
2	0V	18	0V	34	–
3	0V	19	–	35	4.64V
4	PS	20	5.04V	36	4.65V
5	5.02V	21	2.53V	37	5.02V
6	–	22	2.63V	38	5.06V
7	0V	23	–	39	5.06V
8	0V	24	0V	40	0V
9	4.98V	25	4.98V	41	0.01V
10	4.98V	26	4.97V	42	5.03V
11	4.98V	27	0V	43	5.03V
12	–	28	4.99V	44	0V
13	0V	29	0.43V		
14	0V	30	0V		
15	0V	31	4.22V		
16	0V	32	0.52V		

IC204

1	4.35V	9	0V
2	0.42V	10	0.01V
3	4.35V	11	0V
4	0V	12	4.35V
5	4.35V	13	4.35V
6	0V	14	4.36V
7	0V	15	0.51V
8	0V	16	8.35V

IC203 , 207

1	4.35V
2	4.35V
3	4.35V
4	0V
5	4.35V
6	4.35V
7	4.35V
8	8.35V

IC205

1	4.37V
2	4.35V
3	4.35V
4	0V
5	4.35V
6	4.35V
7	4.37V
8	8.35V

IC208

1	4.36V
2	4.35V
3	4.35V
4	0V
5	4.35V
6	4.35V
7	4.35V
8	8.35V

IC209

1	4.35V
2	4.35V
3	3.95V
4	0V
5	3.95V
6	4.35V
7	4.35V
8	8.35V

IC210

1	4.35V
2	4.35V
3	4.31V
4	0V
5	4.32V
6	4.35V
7	4.34V
8	8.35V

IC211

1	4.34V
2	4.35V
3	4.34V
4	0V
5	4.32V
6	4.35V
7	4.39V
8	8.35V

IC801

1	7.88V
2	1.48V
3	1.73V
4	0V
5	4.35V
6	4.35V
7	4.35V
8	8.35V

IC802

1	1.23V
2	0V
3	13.23V

IC602

1	5.03V
2	5.05V
3	0V

IC804

1	4.65V
2	5.06V
3	0V

	E	C	B		E	C	B
Q202	0V	0V	4.98V	Q809	5.04V	5.04V	0.02V
Q203	0V	0.01V	5V	Q810	0V	PS	0V
Q204	0V	0V	PS	Q811	0V	0V	5.03V
Q205	0V	0V	PS	Q812	9.06V	8.66V	PS
Q206	0V	0V	PS	Q813	13.78V	0V	13.76V
Q207	0V	0V	PS	Q814	0V	13.75V	0V
Q602	0V	0V	PS	Q815	0V	0.02V	9.62V
Q603	0V	5.08V	0V	Q816	13.73V	13.73V	13.09V
Q604	5.04V	0V	5.07V	Q817	13.74V	13.73V	13.09V
Q605	0V	0V	0V	Q818	0V	−0.05V	3.65V
Q620	5.05V	0V	PS	Q819	13.79V	0V	13.77V
Q621	5.05V	PS	PS	Q820	0V	13.73V	0V
Q622	0V	PS	PS	Q821	0V	0.01V	0.61V
Q801	0V	0.07V	5.06V	Q822	4.68V	4.67V	0V
Q803	13.78V	8.35V	13.19V	Q823	5.09V	5.05V	0V
Q804	13.82V	13.78V	13.12V	Q824	0V	5V	0V
Q808	5.09V	13.82V	5.67V	Q825	0V	5V	0V

[Measuring Conditions]

* Power Supply Voltage	: D C 14V
* Measuring Meter	: Digital Multi Voltmeter
* Measuring Point Reference	: Between Ground
* Measuring Conditions	: No signal input
	FM : 98.1MHz
	MW : 999kHz
	LW : 216kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. = Resistor
C.F. = Carbon Film
M.F. = Metal Film
M.O. = Metal Oxide Film
M.P. = Metal Plate
TR. = Transistor
TRANS. = Transformer
CP. = Chip

CAP. = Capacitor
ELY. = Electrolytic
CER. = Ceramic
MYL. = Mylar
TAN. = Tantalum
POLY. = Polystyrol
PP. = Polypropylene
PLT. = Polyethylene
PF. = Polyester Film

Main P. C. Board

	Symbol No.	Part No.	Description
	IC's		
	IC001	51T94316F02	AN7465S
	IC002	51T93333F01	NJM2904M
	IC004	51T35246W01	35246W01
	IC005	51T15655W02	TDA1579T
	IC203	51T92001F21	XRA4560F
	or	51T92001F11	BA4560F
	IC204	51T15270W21	XRU4052BF
	or	51T15270W11	BU4052BF
	IC205	51T25154W21	XRA15532F
	or	51T25154W11	BA15532F
	IC206	51T72016F02	LC7537AN
	IC207	51T92001F21	XRA4560F
	or	51T92001F11	BA4560F
	IC208	51T92001F21	XRA4560F
	or	51T92001F11	BA4560F
	IC209	51T80136F04	M5238FP
	IC210	51T80136F04	M5238FP
	IC211	51T80136F04	M5238FP
	IC601	51T16615W33	16615W33
	IC602	51T95014F13	S-8052HNM-CR
	IC801	51T92001F21	XRA4560F
	or	51T92001F11	BA4560F
	IC802	51T90890F01	M5236ML
	IC804	51T95014F01	S-8054ALB-LM
	Transistors		
●	Q001	48T52438F01	CP., 2SD601A
●	Q002	48T63420F01	CP., 2SA1037K
●	Q003	48T62966F09	CP., DTA114T
	Q004	48T62967F09	CP., DTC114TK
	Q005	48T62966F03	CP., DTA124
	Q007	48T90181F05	2SD1993
	Q008	48T62967F03	CP., DTC124K
	Q009	48T90181F05	2SD1993
	Q010	48T62967F03	CP., DTC124K
	Q011	48T62967F03	CP., DTC124K
	Q012	48T62967F03	CP., DTC124K
	Q013	48T84234F03	2SB1238
	Q014	48T84234F03	2SB1238
	Q015	48T62967F03	CP., DTC124K
	Q016	48T62967F03	CP., DTC124K
	Q017	48T52438F01	CP., 2SD601A
	Q202	48T62967F04	CP., DTC144K
	Q203	48T62967F04	CP., DTC144K
	Q204	48T63788F01	CP., 2SD1328
	Q205	48T63788F01	CP., 2SD1328
	Q206	48T63788F01	CP., 2SD1328
	Q207	48T63788F01	CP., 2SD1328
	Q602	48T62967F03	CP., DTC124K
	Q603	48T62967F04	CP., DTC144K
	Q604	48T62966F03	CP., DTA124
	Q605	48T62967F03	CP., DTC124K
	Q620	48T63417F01	CP., 2SC2412K
	Q621	48T62966F04	CP., DTA144
	Q622	48T62967F04	CP., DTC144K
	Q801	48T62967F03	CP., DTC124K
	Q803	48T84366F01	2SB1243
	Q804	48T84366F01	2SB1243
	Q805	48T62967F03	CP., DTC124K
	Q806	48T62966F02	CP., DTA114
	Q807	48T15289W03	2SD2008Q
	Q808	48T83415F03	2SD1858
	Q809	48T62966F02	CP., DTA114
	Q810	48T62966F03	CP., DTA124
	Q811	48T62967F03	CP., DTC124K
	Q812	48T63420F01	CP., 2SA1037K
	Q813	48T63420F01	CP., 2SA1037K
	Q814	48T62967F03	CP., DTC124K
	Q815	48T62967F03	CP., DTC124K
	Q816	48T84366F01	2SB1243
	Q817	48T84366F01	2SB1243
	Q818	48T62967F03	CP., DTC124K
	Q819	48T62967F03	CP., DTC124K
	Q820	48T62966F02	CP., DTA114
	Q821	48T52438F01	CP., 2SD601A
	Q822	48T62966F02	CP., DTA114
	Q823	48T62966F03	CP., DTA124
	Q824	48T52438F01	CP., 2SD601A
	Q825	48T62967F03	CP., DTC124K

Note : ● : For Germany Model Only, Others : Common.

Diodes

	Symbol No.	Part No.	Description
	D003	48T63462F01	CP., DAN202K
	D005	48T63462F01	CP., DAN202K
	D007	48T94608F03	CP., DAN202U
	D010	48T94608F03	CP., DAN202U
	D022	48T63462F01	CP., DAN202K
	D201	48T94608F01	CP., DA204U
	D202	48T94608F02	CP., DAP202U
	D203	48T94608F02	CP., DAP202U
	D601	48T63462F01	CP., DAN202K
	D602	48T63462F01	CP., DAN202K
	D621	48T63462F01	CP., DAN202K
	D801	48T63462F01	CP., DAN202K
	D802	48T94608F03	CP., DAN202U
	D803	48T84052F11	11ES2
	D804	48T94608F01	CP., DA204U
	D805	48T94608F03	CP., DAN202U
	D806	48T84052F11	11ES2
	D807	48T63462F01	CP., DAN202K
	D810	48T81044F01	10E2
	D811	48T81044F01	10E2
	D813	48T94608F03	CP., DAN202U
	ZD002	48T25766W24	Zener, HZS9C1L
	ZD202	48T25801W11	Zener, HZS5BLL
	ZD801	48T25766W24	Zener, HZS9C1L
	ZD802	48T25766W04	Zener, HZS6B1L
	ZD803	48T25766W24	Zener, HZS9C1L
	ZD804	48T25766W04	Zener, HZS6B1L

Crystals / Switch

	Symbol No.	Part No.	Description
	X001	91T25806W23	4.5MHz
	X601	91T15285W01	CER. Lock, 4.19MHz
	S601	40T94668F05	Switch, SSSF124 (ALARM LEVEL)

Coils

	Symbol No.	Part No.	Description
●	L001	24T25798W13	1mH
	L002	24T84175F01	SDK, 57KHz
	L801	25T47510F01	Choke
	L802	25T47510F01	Choke

Capacitors

	Symbol No.	Part No.	Description	
	C001	08S65128F69	CP.,	0.01μF
	E001	23S61524F09	ELY.,	22μF / 10V
	C002	08S65128F67	CP.,	6800pF
	E002	23S61524F28	ELY.,	0.1μF / 50V
	C003	08T35388W30	P.P.,	390pF
	E003	23S61524F28	ELY.,	0.1μF / 50V
	C004	08T15399W03	CP.,	0.047μF
	E004	23S61524F29	ELY.,	0.22μF / 50V
	C005	08T15399W03	CP.,	0.047μF
	E005	23S61524F32	ELY.,	1μF / 50V
	C006	08S65128F63	CP.,	3300pF
	E006	23S61524F28	ELY.,	0.1μF / 50V
	C007	08S65128F69	CP.,	0.01μF
	E007	23S61524F18	ELY.,	4.7μF / 25V
	C008	08S65128F45	CP.,	270pF
	E008	23S61524F18	ELY.,	4.7μF / 25V
	C009	08S65128F69	CP.,	0.01F
●	E009	23S61524F32	ELY.,	1μF / 50V
	C010	08T15399W01	CP.,	0.022μF
	E010	23S61524F32	ELY.,	1μF / 50V
	C011	08T15399W01	CP.,	0.022μF
●	C012	08S65128F69	CP.,	0.01μF
●	C013	08S65128F69	CP.,	0.01μF
	E013	23S16086W01	ELY.,	220μF / 10V
●	C014	08T15399W01	CP.,	0.022μF
	E014	23S61524F32	ELY.,	1μF / 50V
●	C015	08S65128F69	CP.,	0.01μF
	E015	23S61524F32	ELY.,	1μF / 50V
●	C016	08S65128F69	CP.,	0.01μF
	C017	08S65128F57	CP.,	1000pF
	E017	23S61524F08	ELY.,	100μF / 6.3V
	C018	08S65128F69	CP.,	0.01μF
	E018	23S61524F18	ELY.,	4.7μF / 25V
	C019	08T15399W01	CP.,	0.022μF
	E019	23S61524F28	ELY.,	0.1μF / 50V
	C020	08T15399W04	CP.,	0.027μF
	E020	23S61524F32	ELY.,	1μF / 50V
	C021	08S65128F63	CP.,	3300pF
	E021	23S61524F32	ELY.,	1μF / 50V
	C022	08T90316F25	TF,	0.047μF
	E022	23S61524F28	ELY.,	0.1μF / 50V
	E023	23S61524F28	ELY.,	0.1μF / 50V
	C024	08S65128F69	CP.,	0.01μF
	E024	23S61524F13	ELY.,	10μF / 16V
	C027	08T15399W02	CP.,	0.033μF
	C028	08T15399W02	CP.,	0.033μF
	C030	08S65128F69	CP.,	0.01μF
	C034	08S65128F69	CP.,	0.01μF
	C035	08S65128F69	CP.,	0.01μF
	C036	08T15399W01	CP.,	0.022μF

Note : ● : For Germany Model Only, Others : Common.

Symbol No.	Part No.	Description
C037	08S65128F35	CP., 100pF
C038	08S65128F35	CP., 100pF
C039	08S65128F35	CP., 100pF
C040	08S82122F21	CP., 22pF
C041	08S82122F21	CP., 22pF
C042	08S65128F59	CP., 1500pF
C043	08T80316F28	TF., 0.082μF
C044	08T90316F27	TF., 0.068μF
C045	08T90316F27	TF., 0.068μF
C046	08T90316F29	TF., 0.1μF
C047	08T90316F25	TF., 0.047μF
C048	08T90316F25	TF., 0.047μF
C049	08T90316F23	TF., 0.033μF
C099	23T82372F19	ELY., (B.P) 2.2μF / 50V
C201	08S65128F74	CP., 0.047μF
C205	08S65128F19	CP., 22pF
C206	08S65128F19	CP., 22pF
C207	08S65128F19	CP., 22pF
C208	08S65128F19	CP., 22pF
E208	23T25149W09	ELY., 10μF / 16V
C209	08S65128F35	CP., 100pF
E209	23T25149W09	ELY., 10μF / 16V
C210	08S65128F35	CP., 100pF
E210	23T25149W09	ELY., 10μF / 16V
C211	08S65128F19	CP., 22pF
E211	23T25149W09	ELY., 10μF / 16V
C212	08S65128F19	CP., 22pF
E212	23T25149W09	ELY., 10μF / 16V
C213	08T15399W01	CP., 0.022μF
E213	23S61524F18	ELY., 4.7μF / 25V
C214	08S65128F69	CP., 0.01μF
E214	23S61524F18	ELY., 4.7μF / 25V
C215	08S65128F19	CP., 22pF
E215	23T25149W09	ELY., 10μF / 16V
C216	08S65128F19	CP., 22pF
E216	23T25149W09	ELY., 10μF / 16V
C217	08T90316F09	TF, 2200pF
E217	23T25149W09	ELY., 10μF / 16V
C218	08T90316F09	TF, 2200pF
E218	23T25149W09	ELY., 10μF / 16V
C219	08T90316F30	TF, 0.12μF
E219	23T25149W09	ELY., 10μF / 16V
C220	08T90316F30	TF, 0.12μF
E220	23T25149W09	ELY., 10μF / 16V
C221	08T90316F30	TF, 0.12μF
E221	23S61524F13	ELY., 10μF / 16V
C222	08T90316F30	TF, 0.12μF
E222	23S61524F13	ELY., 10μF / 16V
E223	23T25149W05	ELY., 1μF / 50V
E224	23T25149W05	ELY., 1μF / 50V
E225	23T25149W09	ELY., 10μF / 16V
E226	23T25149W09	ELY., 10μF / 16V

Symbol No.	Part No.	Description
E227	23T45102W25	ELY., 10μF / 50V
C228	08T15399W02	CP., 0.033μF
E228	23T45102W25	ELY., 10μF / 50V
E229	23T25149W09	ELY., 10μF / 16V
C230	08T15399W03	CP., 0.047μF
E230	23T45102W25	ELY., 10μF / 50V
E231	23T25149W09	ELY., 10μF / 16V
E232	23T45102W25	ELY., 10μF / 50V
E240	23T25149W09	ELY., 10μF / 16V
E241	23T25149W09	ELY., 10μF / 16V
E242	23T25149W09	ELY., 10μF / 16V
E243	23T25149W09	ELY., 10μF / 16V
C400	08S65128F49	CP., 390pF
C601	08S65128F69	CP., 0.01μF
E601	23S61524F11	ELY., 47μF / 10V
C602	08T15399W01	CP., 0.022μF
E602	23S61524F13	ELY., 10μF / 16V
C603	08S65128F74	CP., 0.047μF
C623	08S65128F51	CP., 470μF
C801	08T90316F29	TF, 0.1μF
E801	23T45102W24	ELY., 4.7μF / 50V
C802	08S65128F69	CP., 0.01μF
E802	23S61524F13	ELY., 10μF / 16V
C803	08T90316F29	TF, 0.1μF
E803	23T00180L15	ELY., 220μF / 25V
E804	23S61524F16	ELY., 47μF / 16V
E805	23S61524F32	ELY., 1μF / 50V
E806	23S61524F31	ELY., 0.47μF / 50V
E807	23S61524F13	ELY., 10μF / 16V
E808	23S61524F13	ELY., 10μF / 16V
E809	23T61524F13	ELY., 10μF / 16V
E810	23S61524F32	ELY., 1μF / 50V
E811	23S61524F13	ELY., 10μF / 16V
E812	23S16086W02	ELY., 330μF / 6.3V
E814	23T16360W41	ELY., 3300μF / 16V
E820	23T45102W13	ELY., 47μF / 25V

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

R001	06S64996F18	470K ohm
R002	06T70072F05	10 ohm 1/4W
R003	06S64995F79	12K ohm
R004	06S64995F65	3.3K ohm
R005	06S64995F57	1.5K ohm
R006	06S64996F26	1M ohm
R007	06S64995F69	4.7K ohm
R008	06S64995F65	3.3K ohm
R009	06S64995F81	15K ohm

	Symbol No.	Part No.	Description
	R010	06S64995F93	47K ohm
	R011	06S64996F02	100K ohm
●	R012	06S64996F04	120K ohm
●	R013	06S64995F89	33K ohm
●	R014	06S64995F21	47 ohm
●	R015	06S64995F02	100K ohm
●	R016	06S64995F02	100K ohm
●	R017	06S64995F75	8.2K ohm
	R018	06S64995F77	10K ohm
	R019	06S64995F81	15K ohm
	R020	06S64995F95	56K ohm
	R021	06S64995F87	27K ohm
	R022	06S64995F87	27K ohm
	R023	06S64996F02	100K ohm
	R024	06S64996F02	100K ohm
	R025	06S64995F85	22K ohm
	R026	06S64996F20	560K ohm
	R027	06S64996F14	330K ohm
	R028	06S64995F41	330 ohm
	R029	06S64996F26	1M ohm
	R030	06S64996F02	100K ohm
	R031	06S64995F81	15K ohm
	R032	06S64995F77	10K ohm
	R033	06S64995F77	10K ohm
	R034	06S64996F02	100K ohm
	R035	06S64995F95	56K ohm
	R036	06S64995F95	56K ohm
	R037	06S64996F02	100K ohm
	R038	06S64996F02	100K ohm
	R046	06S64995F77	10K ohm
	R050	06S64995F05	10 ohm
	R052	06S64995F65	3.3K ohm
	R054	06S64995F75	8.2K ohm
	R055	06S64995F53	1K ohm
	R061	06S64995F77	10K ohm
	R062	06S64995F53	1K ohm
	R063	06S64995F65	3.3K ohm
	R064	06T70072F41	330 ohm 1/4W
	R065	06S64995F77	10K ohm
	R067	06S64995F77	10K ohm
	R068	06S64995F77	10K ohm
	R069	06S64995F71	5.6K ohm
	R070	06S64996F02	100K ohm
	R071	06S64995F77	10K ohm
	R072	06S64995F77	10K ohm
	R073	06S64995F61	2.2K ohm
	R074	06S64995F65	3.3K ohm
	R075	06S64995F61	2.2K ohm
	R076	06S64996F08	180K ohm
	R080	06S64995F69	4.7K ohm
	R081	06S64996F10	220K ohm
	R082	06S64996F22	680K ohm

Symbol No.	Part No.	Description
R083	06S64995F43	390 ohm
R084	06S64996F02	100K ohm
R085	06S64995F69	4.7K ohm
R086	06S64995F93	47K ohm
R087	06S64995F97	68K ohm
R088	06S64995F77	10K ohm
R089	06S64995F97	68K ohm
R090	06S64995F91	39K ohm
R091	06S64996F10	220K ohm
R092	06S64995F77	10K ohm
R093	06S64995F97	68K ohm
R094	06S64996F22	680K ohm
R095	06S64996F04	120K ohm
R096	06S64995F49	680 ohm
R201	06S64995F77	10K ohm
R202	06S64995F77	10K ohm
R203	06S64995F65	3.3K ohm
R204	06S64996F04	120K ohm
R205	06S64996F02	100K ohm
R206	06S64995F91	39K ohm
R207	06S64996F03	110K ohm
R208	06S64995F83	18K ohm
R209	06S64995F83	18K ohm
R210	06S64995F77	10K ohm
R211	06S64995F77	10K ohm
R212	06S64995F77	10K ohm
R213	06S64995F77	10K ohm
R214	06S64995F77	10K ohm
R215	06S64995F77	10K ohm
R216	06S64995F77	10K ohm
R217	06S64995F77	10K ohm
R221	06S64995F85	22K ohm
R222	06S64995F85	22K ohm
R223	06S64995F71	5.6K ohm
R224	06S64995F71	5.6K ohm
R225	06S64995F98	75K ohm
R226	06S64995F98	75K ohm
R227	06S64995F85	22K ohm
R228	06S64995F85	22K ohm
R229	06S64996F02	100K ohm
R230	06S64996F02	100K ohm
R231	06S64995F93	47K ohm
R232	06S64995F73	6.8K ohm
R233	06S64995F53	1K ohm
R234	06S64995F69	4.7K ohm
R235	06S64995F77	10K ohm
R236	06S64995F77	10K ohm
R237	06S64995F77	10K ohm
R238	06S64995F77	10K ohm
R239	06S64995F63	2.7K ohm
R240	06S64995F63	2.7K ohm
R241	06S64996F26	1M ohm

Note : ● : For Germany Model Only, Others : Common.

Symbol No.	Part No.	Description
R242	06S64996F26	1M ohm
R243	06S64996F26	1M ohm
R244	06S64996F26	1M ohm
R245	06S64996F26	1M ohm
R246	06S64996F26	1M ohm
R247	06S64995F77	10K ohm
R248	06S64995F77	10K ohm
R249	06S64995F95	56K ohm
R250	06S64995F95	56K ohm
R251	06S64995F29	100 ohm
R252	06S64995F29	100 ohm
R253	06S64995F85	22K ohm
R254	06S64995F85	22K ohm
R257	06S64995F77	10K ohm
R258	06S64995F77	10K ohm
R259	06S64995F95	56K ohm
R260	06S64995F95	56K ohm
R261	06S64995F29	100 ohm
R262	06S64995F29	100 ohm
R263	06S64995F85	22K ohm
R264	06S64995F85	22K ohm
R280	06S64995F77	10K ohm
R281	06S64995F77	10K ohm
R282	06S64995F77	10K ohm
R283	06S64995F77	10K ohm
R284	06S64996F26	1M ohm
R285	06S64996F26	1M ohm
R286	06S64996F26	1M ohm
R287	06S64996F26	1M ohm
R288	06S64996F02	100K ohm
R289	06S64996F02	100K ohm
R290	06S64996F02	100K ohm
R291	06S64996F02	100K ohm
R292	06S64995F77	10K ohm
R293	06S64995F77	10K ohm
R294	06S64995F77	10K ohm
R295	06S64995F77	10K ohm
R601	06S64996F02	100K ohm
R602	06S64996F02	100K ohm
R603	06S64996F02	100K ohm
R605	06S64996F02	100K ohm
R606	06S64995F93	47K ohm
R609	06S64995F69	4.7K ohm
R616	06S64996F02	100K ohm
R617	06S64996F02	100K ohm
R618	06S64996F02	100K ohm
R623	06S64996F02	100K ohm
R624	06S46996F02	100K ohm
R653	06S64995F85	22K ohm
R654	06S64995F77	10K ohm
R655	06S64995F83	18K ohm
R801	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R802	06S64995F85	22K ohm
R803	06S64995F85	22K ohm
R804	06S64995F69	4.7K ohm
R806	06S64995F81	15K ohm
R807	06T70072F37	220 ohm 1/4W
R808	06T70072F53	1K ohm 1/4W
R809	06S64995F77	10K ohm
R810	06S64995F85	22K ohm
R811	06S64995F77	10K ohm
R812	06S64996F10	220K ohm
R813	06S64995F61	2.2K ohm
R814	06T70072F88	7.5 ohm 1/4W
R815	06T70072F88	7.5 ohm 1/4W
R816	06S64995F77	10K ohm
R817	06T70072F61	2.2K ohm 1/4W
R818	06S64995F77	10K ohm
R819	06S64995F77	10K ohm
R820	06T70072F61	2.2K ohm 1/4W
R821	06S64995F85	22K ohm
R822	06S53330F77	10K ohm 1/8W
R823	06T70072F53	1K ohm 1/4W
R825	06S64995F77	10K ohm
R826	06S64995F77	10K ohm
R827	06T70072F65	3.3K ohm 1/4W
R828	06S53330F93	47K ohm 1/8W
R829	06S64995F77	10K ohm
R830	06S64996F02	100K ohm
R836	06S53330F77	10K ohm 1/8W
R840	06T70072F61	2.2K ohm 1/4W
R841	06S64995F85	22K ohm
R842	06S64995F87	27K ohm
R844	06T70072F57	1.5K ohm 1/4W
R850	06T70072F88	7.5 ohm 1/4W
R860	06S64995F77	10K ohm
VR001	18T15355W11	Variable, 4.7K ohm
VR002	18T15356W09	Variable, 2.2K ohm
VR003	18T15356W14	Variable, 15K ohm
VR004	18T15356W03	Variable, 220 ohm

Tuner P . C . Board

IC

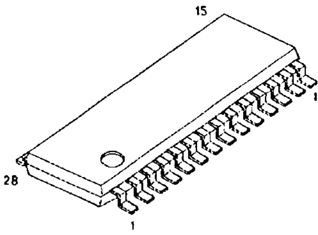
IC003	51T96030F01	μPC1675G

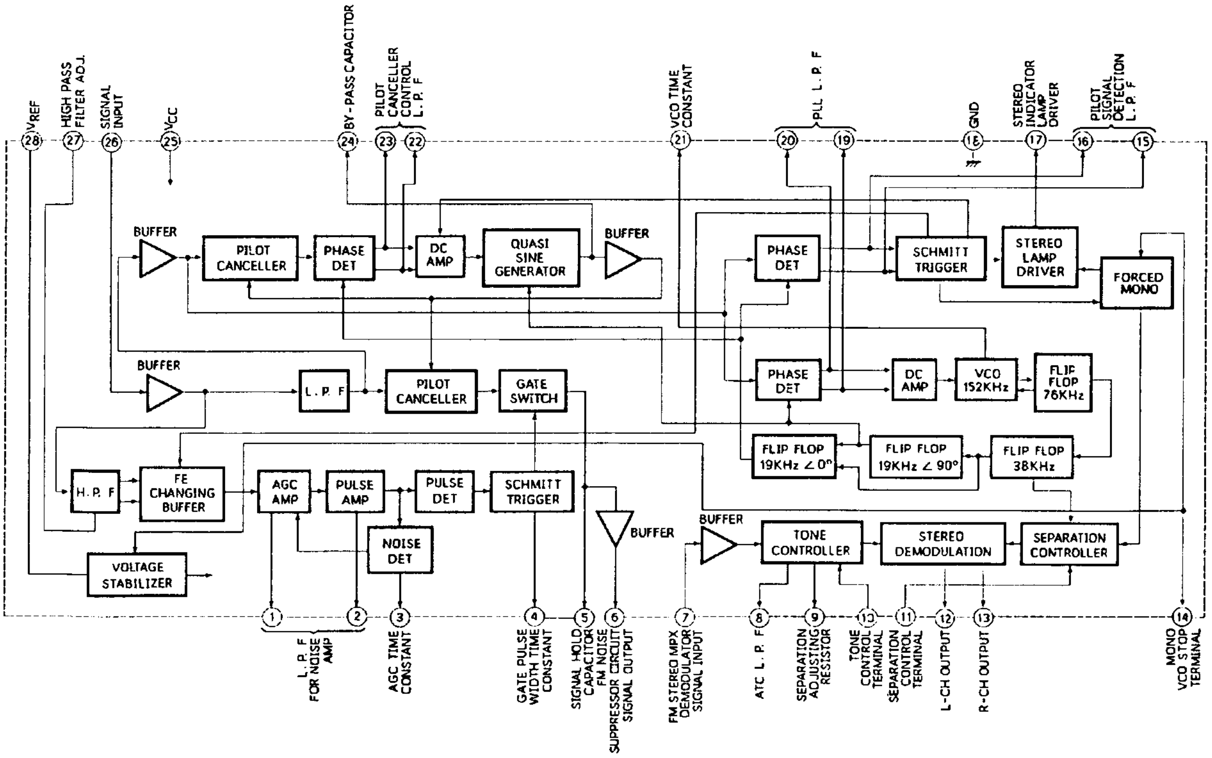
Symbol No.	Part No.	Description
Diodes		
D001	48T94608F03	CP., DAN202U
D002	48T63462F01	CP., DAN202K
D004	48T94608F03	CP., DAN202U
Capacitors		
E011	23S61523F29	ELY., 1μF / 50V
E016	23S61524F09	ELY., 22μF / 10V
C023	08S65128F69	CP., 0.01μF
C026	08T15399W02	CP., 0.033μF
C029	08S65128F57	CP., 1000pF
C031	08S65128F69	CP., 0.01μF
C032	08S65128F23	CP., 33pF
C033	08S65128F57	CP., 1000pF
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R041	06S64995F85	22K ohm
R042	06S64995F77	10K ohm
R043	06S64995F53	1K ohm
R044	06S64995F85	22K ohm
R045	06S64996F02	100K ohm
R047	06S64995F29	100 ohm
R048	06S64995F15	27 ohm
R049	06S64995F53	1K ohm
R051	06S64995F53	1K ohm
R056	06S64995F61	2.2K ohm
R057	06S64995F61	2.2K ohm
R058	06S64995F61	2.2K ohm
R059	06T70072F37	220 ohm 1/4W
R060	06S64995F53	1K ohm
Output P. C. Board		
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R255	06S64995F21	47 ohm
R256	06S64995F21	47 ohm
R265	06S64995F21	47 ohm
R266	06S64995F21	47 ohm

Symbol No.	Part No.	Description
Miscellaneous		
ET001	01T45246W01	Assy., Power Supply Connector
ET002	01T15513W03	Antenna Receptacle
JK201	09T16162W05	Jack, DIN
JK202	09T70753F10	Jack, Rear RCA
JK203	09T70753F10	Jack, Front RCA

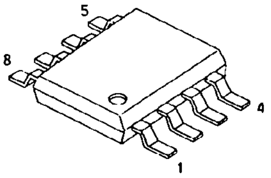
Semi - Conductor Lead Identifications

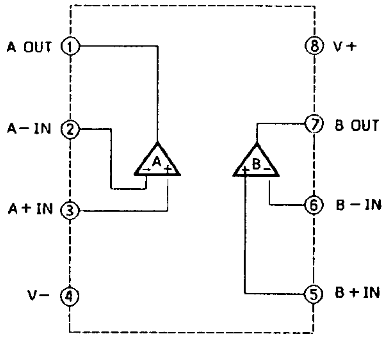
AN7465S : IC001



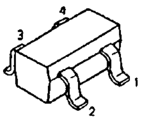

VREF
HIGH PASS FILTER ADJ.
SIGNAL INPUT
VCC
BY-PASS CAPACITOR
PILOT CANCELLER CONTROL L. P. F
VCO TIME CONSTANT
PLL L. P. F
GND
STEREO INDICATOR LAMP DRIVER
PILOT SIGNAL DETECTION L. P. F
28
27
26
25
24
23
22
21
20
19
18
17
16
15
BUFFER
PILOT CANCELLER
PHASE DET
DC AMP
QUASI SINE GENERATOR
BUFFER
PHASE DET
SCHMITT TRIGGER
STEREO LAMP DRIVER
FORCED MONO
BUFFER
L. P. F
PILOT CANCELLER
GATE SWITCH
PHASE DET
DC AMP
VCO 152KHz
FLIP FLOP 76KHz
FLIP FLOP 19KHz ∠0°
FLIP FLOP 19KHz ∠90°
FLIP FLOP 38KHz
H. P. F
FE CHANGING BUFFER
AGC AMP
PULSE AMP
PULSE DET
SCHMITT TRIGGER
NOISE DET
BUFFER
BUFFER
TONE CONTROLLER
STEREO DEMODULATION
SEPARATION CONTROLLER
VOLTAGE STABILIZER
1
2
3
4
5
6
7
8
9
10
11
12
13
14
L. P. F FOR NOISE AMP
AGC TIME CONSTANT
GATE PULSE WIDTH TIME CONSTANT
SIGNAL HOLD CAPACITOR
FM NOISE SUPPRESSOR CIRCUIT SIGNAL OUTPUT
FM STEREO MPX DEMODULATOR SIGNAL INPUT
ATC L. P. F
SEPARATION ADJUSTING RESISTOR
TONE CONTROL TERMINAL
SEPARATION CONTROL TERMINAL
L-CH OUTPUT
R-CH OUTPUT
MONO VCO STOP TERMINAL

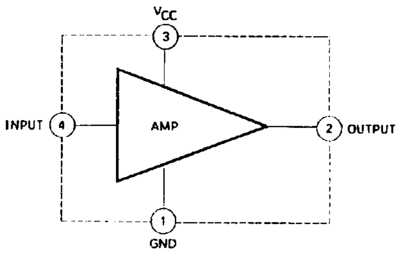
NJM2904M : IC002



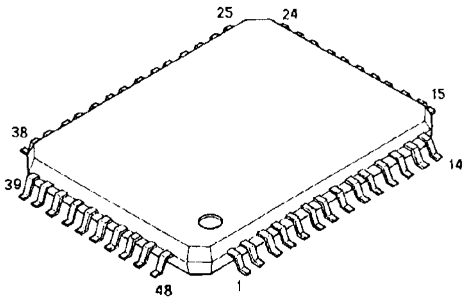

A OUT 1
A− IN 2
A+ IN 3
V− 4
8 V+
7 B OUT
6 B − IN
5 B + IN
A
B

µPC1675G : IC003




VCC
3
INPUT 4
AMP
2 OUTPUT
1
GND

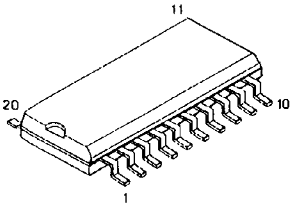
35246W01 : IC004

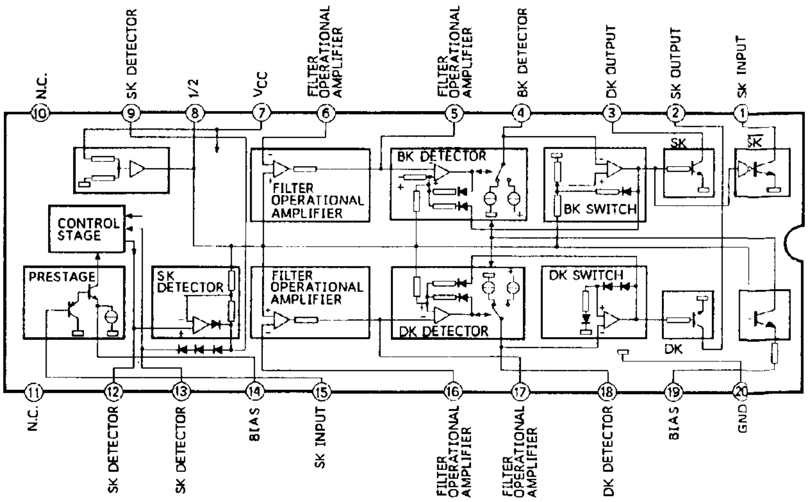


25
24
15
38
14
39
48
1

PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O
1	EO1	O	23	NC	—	45	$\overline{\text{ST}}$	I
2	NC	—	24	TON	O	46	SD.	I
3	V_{DD}	—	25	B3	O	47	S.M.	I
4	NC	—	26	B2	O	48	CI	I
5	VCOH	I	27	B1	O			
6	CE	I	28	NC	—			
7	V_{DD}	—	29	NC	—			
8	NC	—	30	NC	—			
9	MONO	O	31	NC	—			
10	NC	—	32	NC	—			
11	NC	—	33	NC	—			
12	AM IF	I	34	NC	—			
13	FM IF	I	35	NC	—			
14	CMD	I	36	NC	—			
15	$\overline{\text{SCK}}$	O	37	NC	—			
16	STS	O	38	NC	—			
17	START	O	39	NC	—			
18	$\overline{\text{MUTE}}$	O	40	NC	—			
19	LO	O	41	NC	—			
20	XO	O	42	GND	—			
21	XI	I	43	DK	I			
22	GND	—	44	$\overline{\text{SK}}$	I			

TDA1579T : IC005

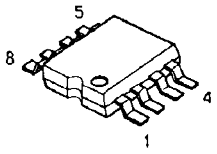


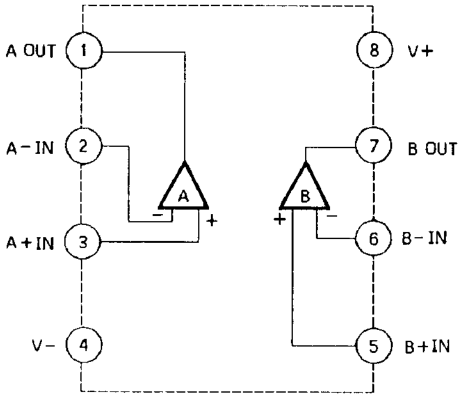


N.C.
SK DETECTOR
1/2
VCC
FILTER OPERATIONAL AMPLIFIER
FILTER OPERATIONAL AMPLIFIER
BK DETECTOR
DK OUTPUT
SK OUTPUT
SK INPUT
10
9
8
7
6
5
4
3
2
1
BK DETECTOR
SK
SK
FILTER OPERATIONAL AMPLIFIER
BK SWITCH
CONTROL STAGE
PRESTAGE
SK DETECTOR
FILTER OPERATIONAL AMPLIFIER
DK SWITCH
DK DETECTOR
DK
11
12
13
14
15
16
17
18
19
20
N.C.
SK DETECTOR
SK DETECTOR
BIAS
SK INPUT
FILTER OPERATIONAL AMPLIFIER
FILTER OPERATIONAL AMPLIFIER
DK DETECTOR
BIAS
GND

BA4560F : IC203, 207, 208, 801

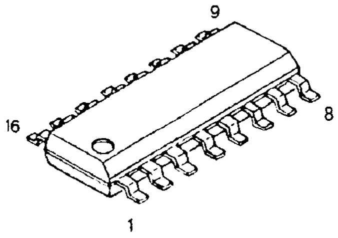
BA15532F : IC205

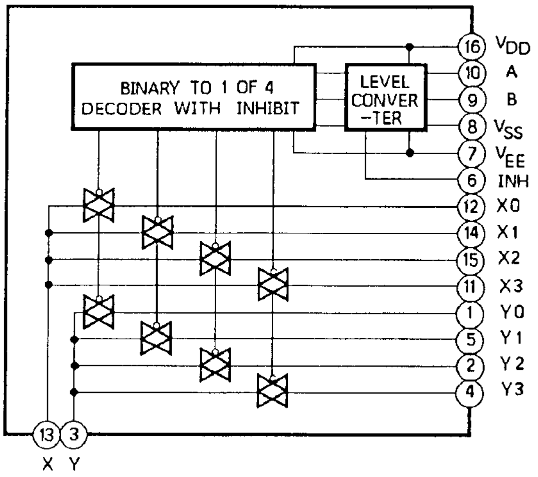




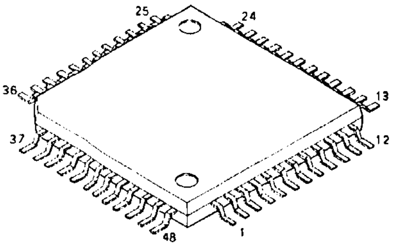
A OUT
1
A−IN
2
A+IN
3
V−
4
8
V+
7
B OUT
6
B−IN
5
B+IN
A
B
−
+
+
−

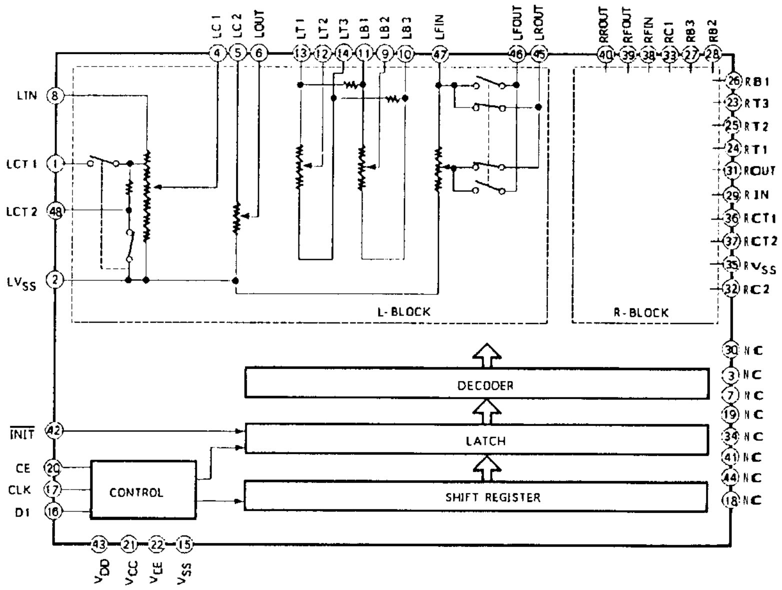
BU4052BF : IC204



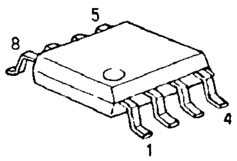

BINARY TO 1 OF 4 DECODER WITH INHIBIT
LEVEL CONVER -TER
16 V_{DD}
10 A
9 B
8 V_{SS}
7 V_{EE}
6 INH
12 X0
14 X1
15 X2
11 X3
1 Y0
5 Y1
2 Y2
4 Y3
13 X
3 Y

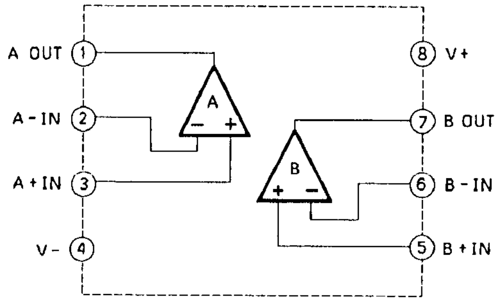
LC7537AN : IC206


25
24
36
13
37
12
48
1

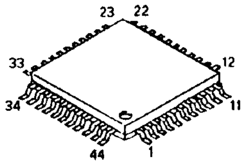

LC1 4
LC2 5
LOUT 6
LT1 13
LT2 12
LT3 14
LB1 11
LB2 9
LB3 10
LFIN 47
LFOUT 46
LROUT 45
RROUT 40
RFOUT 39
RFIN 38
RC1 33
RB3 27
RB2 28
LIN 8
LCT1 1
LCT2 48
LV_{SS} 2
26 RB1
23 RT3
25 RT2
24 RT1
31 ROUT
29 RIN
36 RCT1
37 RCT2
35 RV_{SS}
32 RC2
L-BLOCK
R-BLOCK
30 NC
3 NC
7 NC
19 NC
34 NC
41 NC
44 NC
18 NC
DECODER
LATCH
SHIFT REGISTER
CONTROL
$\overline{INIT}$ 42
CE 20
CLK 17
D1 16
43 V_{DD}
21 VCC
22 V_{CE}
15 V_{SS}

M5238FP : IC209~211



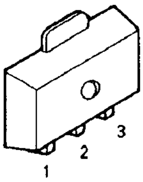

A OUT 1
A - IN 2
A + IN 3
V - 4
8 V+
7 B OUT
6 B - IN
5 B + IN
A
B

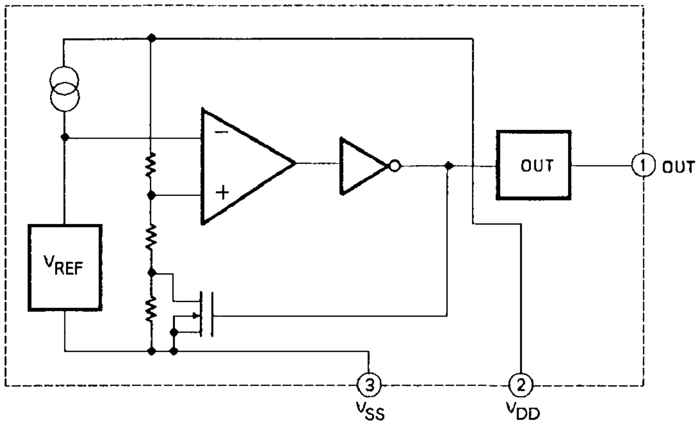
16615W33 : IC601


23
22
33
12
34
11
44
1

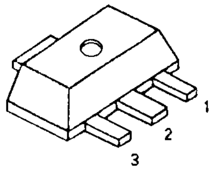
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	EV-DATA	O	23	NC	—
2	EV-CLOCK	O	24	ALARM	O
3	EV-INH	O	25	SDK/TONE	O
4	W.DOG-OUT	O	26	$\overline{\text{CD}}$/TUNER	O
5	O-REM	O	27	GND	—
6	NC	—	28	DTS-CE	O
7	O-INT	O	29	DTS-STS	I
8	GND	—	30	DTS-CMD	O
9	IN-REM	I	31	DTS-CLK	I
10	$\overline{\text{IN-PAUSE}}$	I	32	DTS-START	I
11	$\overline{\text{IN-INT}}$	I	33	DTS-MUTE	I
12	NC	—	34	NC	—
13	VOL.1	—	35	ACC	I
14	VOL.0	—	36	BATT	I
15	AREA-1	I	37	I-BUS	I
16	AREA-0	I	38	V_{DD}	—
17	GND	—	39	V_{DD}	—
18	GND	—	40	GND	—
19	NC	—	41	$\overline{\text{PULL UP SW}}$	O
20	$\overline{\text{RESET}}$	I	42	$\overline{\text{A-MUTE}}$	O
21	X2	—	43	POWER-ON	O
22	X1	—	44	O-BUS	O

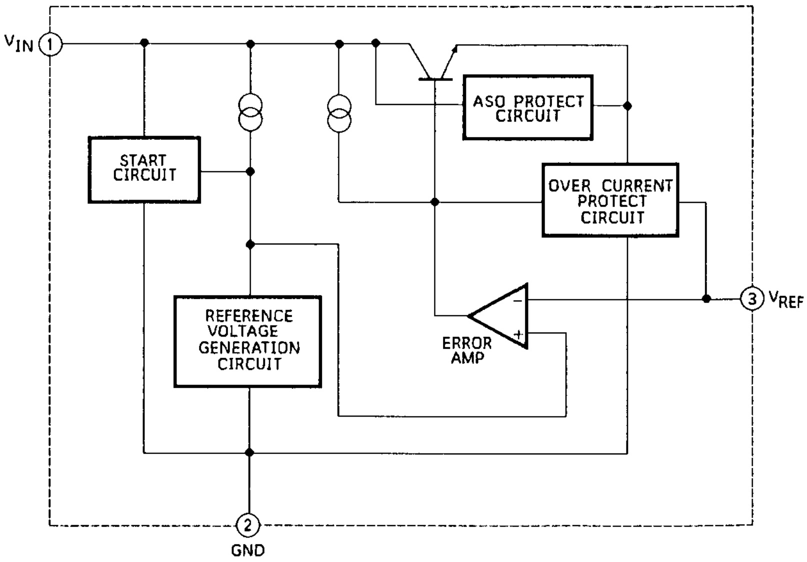
S-8052HNM-CR : IC602
S-8054ALB-LM : IC804




−
+
V_{REF}
OUT
① OUT
③ V_{SS}
② V_{DD}

M5236ML : IC802




V_{IN} ①
ASO PROTECT CIRCUIT
START CIRCUIT
OVER CURRENT PROTECT CIRCUIT
③ V_{REF}
REFERENCE VOLTAGE GENERATION CIRCUIT
ERROR AMP
−
+
② GND

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ALPINE®

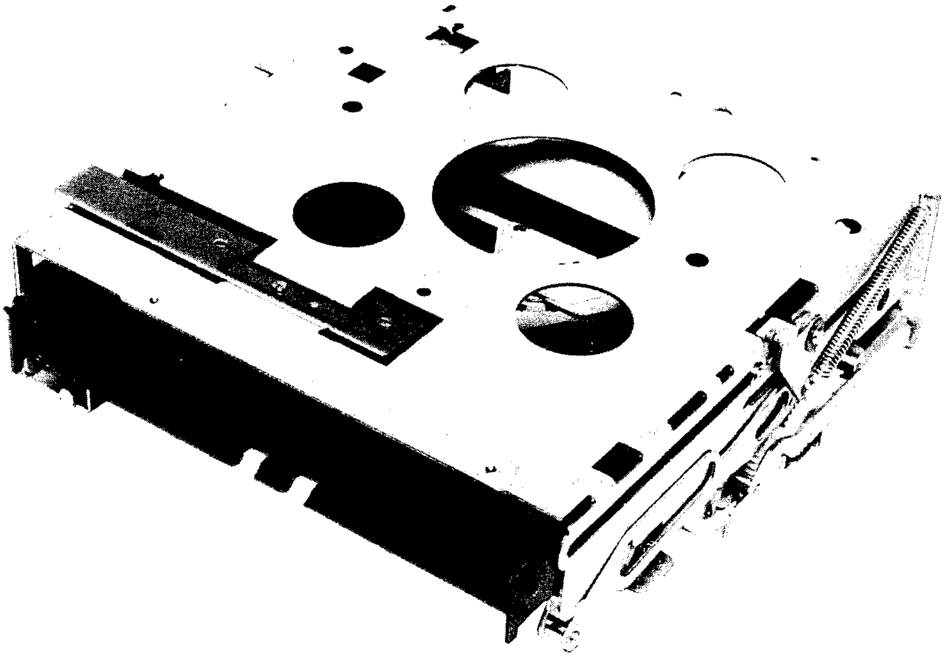
SERVICE MANUAL

In-dash CD Changer Mechanism

V14812

3D Shuttle

ADDENDUM & REVISED



DS SERIES

Contents

CD Mechanism Assembly Parts List 2

Exploded View (CD Mechanism) .... 3 to 4

CD Mechanism Assembly Parts List

Note : The parts is not mentioned, refer to the Service Manual DS Series (68P50238W01).

Symbol No.		Index	Part No.	Description
	5	2-B	41B31986W12	Spring, Coil
	27	4-E	04B41345P24	Washer, Lock (M2.1)
○	33	5-C	01V41100W92	Assy., Driver Unit
□	33	5-C	01V41100W92	Assy., Driver Unit
△	33	5-C	01V53800W55	Assy., Driver Unit
○	35	2-E	01V41100W33	Assy., Chassis Top (A)
□	35	2-E	01V41100W33	Assy., Chassis Top (A)
△	35	2-E	01V63100W01	Assy., Chassis Top (A)
	51	4-D	03S40014G02	Screw, W/Washer (M2×6)
○	86	4-A	44A31666W01	Worm, Wheel Tray
□	86	4-A	44A31666W01	Worm, Wheel Tray
△	86	4-A	44A60134W01	Worm, Wheel Tray
	103	2-E	03S94385F28	Screw, Pan (M1.7×2)
	105	3-F	41B31986W13	Spring, Coil
	118	1-G	03S94385F42	Screw, Pan (M1.7×2.5)
	120		03S94385F41	Screw, Pan (M2×2.5)
	122	2-A	03S40014G82	Screw, W/Washer (M2×3.5)
	123		41A11480W01	Spring
	124		04B41345P23	Washer, Lock (M1.7)
	125		04S40075G09	Washer, Polyslider (M2×5)
	126	4-C	03D40121T38	Screw, W/Double Washer (M2×5)
	127		84T45446W01	FPC LED (1) P.C.Board

Symbol No.		Part No.	Description
Miscellaneous			
○	M103	01V14400W40	Assy., Tray Motor (6V-260mA)
□	M103	01V14400W40	Assy., Tray Motor (6V-260mA)
△	M103	01V61900W99	Assy., Tray Motor (6V-260mA)
○	M104	01V41100W38	Assy., Loading Motor (7V-260mA
□	M104	01V41100W38	Assy., Loading Motor (7V-260mA
△	M104	01V63100W04	Assy., Loading Motor (7V-260mA

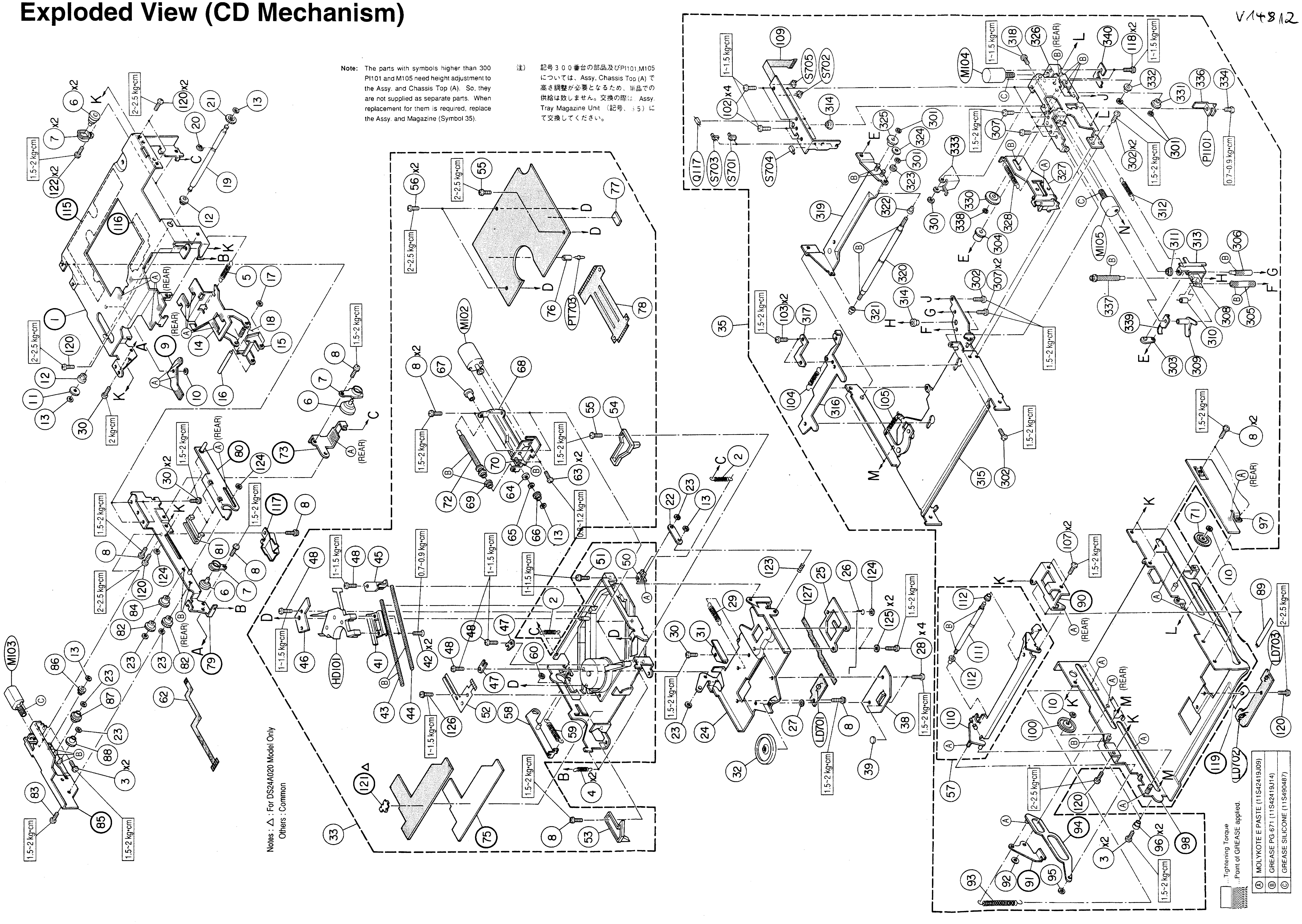
Notes : ○ : DS24A010 Model Only, □ : DS24A01A Model Only,
△ : DS24A020 Model Only, Others : Common.

V14812

Exploded View (CD Mechanism)

Note: The parts with symbols higher than 300 PI101 and M105 need height adjustment to the Assy. and Chassis Top (A). So, they are not supplied as separate parts. When replacement for them is required, replace the Assy. and Magazine (Symbol 35).

注） 記号300番台の部品及びPI101,M105については、Assy, Chassis Top (A) で高さ調整が必要となるため、単品での供給は致しません。交換の際は、Assy. Tray Magazine Unit （記号、35）にて交換してください。



1
2
3
4
5
1.5~2 kg•cm
2~2.5 kg•cm
2 kg•cm
1~1.5 kg•cm
0.7~0.9 kg•cm
0.8~1.2 kg•cm
(REAR)
x2
x4
A
B
C
D
E
F
G
H
J
K
L
M
N
1
2
3
5
6
7
8
9
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340
M102
M103
M104
M105
HD101
PI101
PT703
Q117
S701
S702
S703
S704
S705
LD701
LD702
LD703

Notes : Δ : For DS24A020 Model Only

Others : Common

▭ ...Tightening Torque

▨ ...Point of GREASE applied.

Ⓐ	MOLYKOTE E PASTE (11S42419J09)
Ⓑ	GREASE PG-671 (11S42419J14)
Ⓒ	GREASE SILICONE (11S490487)

A B C D E F G H

MEMO

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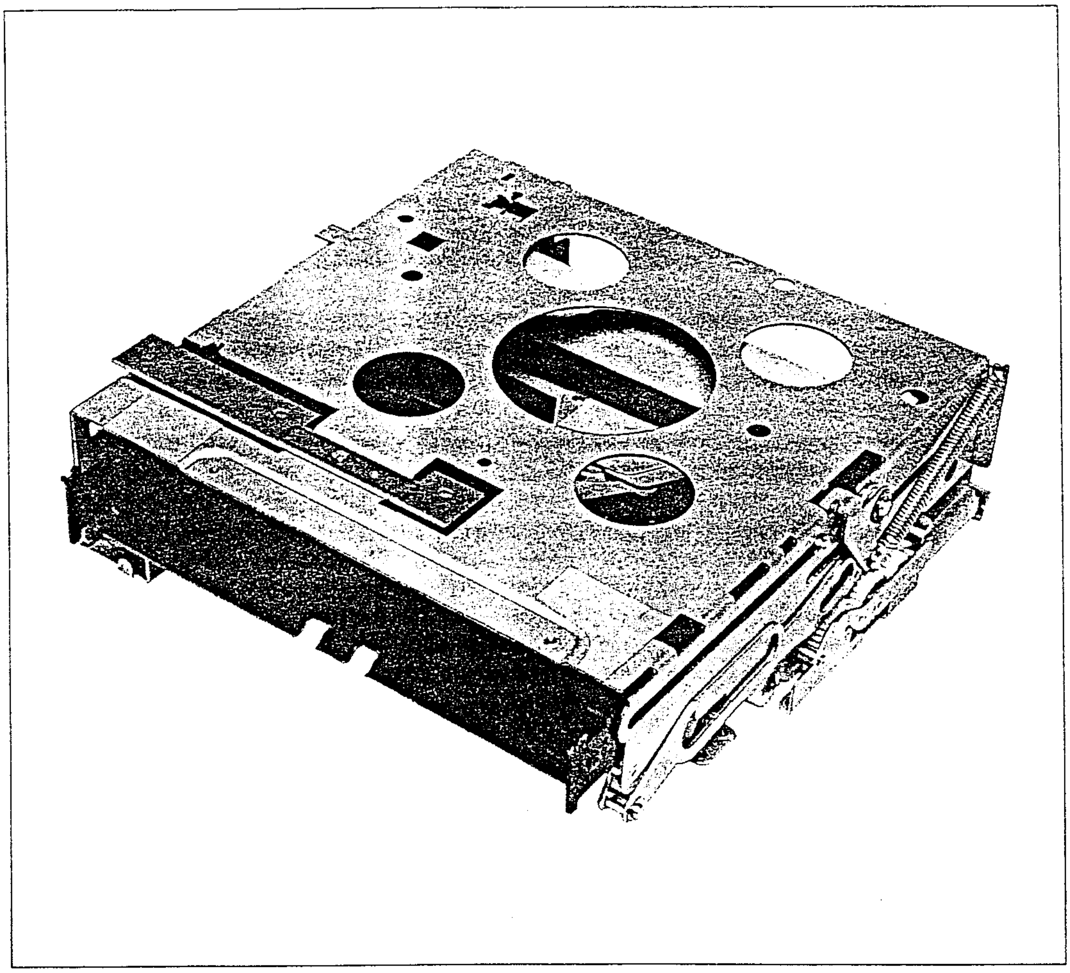
ALPINE®

SERVICE MANUAL

In-dash CD Changer Mechanism

3D Shuttle



DS SERIES

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CD Mechanism Assembly Parts List 11

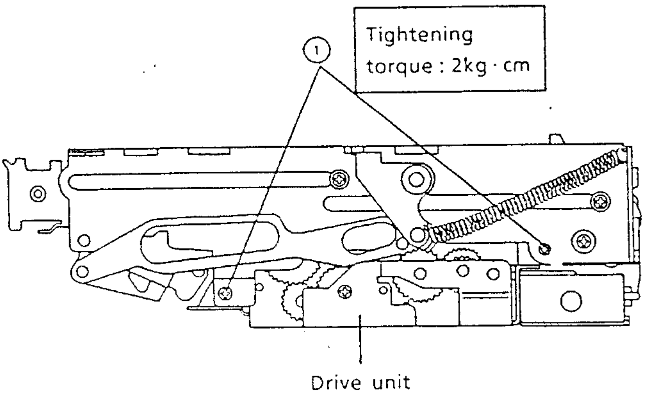
Component disassembly and assembly notes

1. Drive unit disassembly

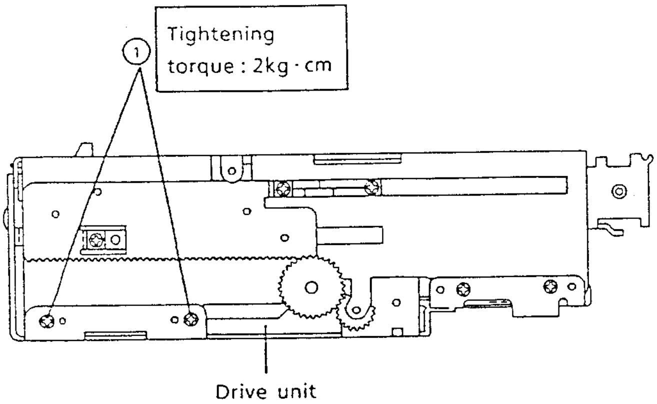
(1) Remove the five screws ①. (See Figures 1, 2, and 3)

<Assembly note>

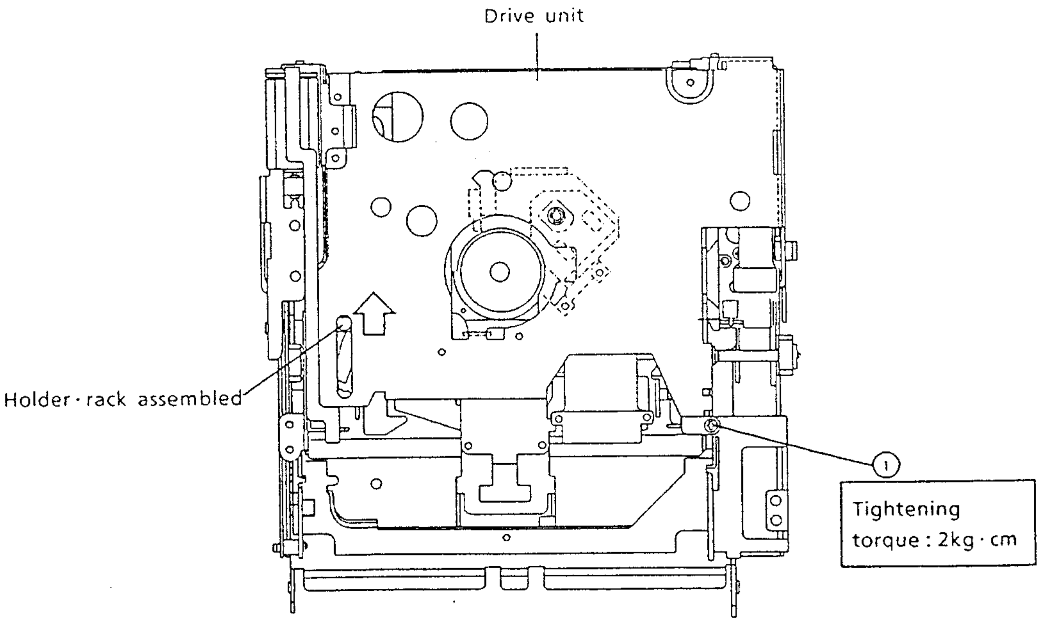
- Move the Holder-rack assembled fully in the direction indicated by the arrow. (See Figure 3)


①
Tightening
torque : 2kg · cm
Drive unit

Right cross section Figure 1


①
Tightening
torque : 2kg · cm
Drive unit

Left cross section Figure 2


Drive unit
Holder · rack assembled
①
Tightening
torque : 2kg · cm

Rear cross section Figure 3

2. Tray motor (M103) disassembly

(1) Remove the four springs ②and the three screws ③. Disassemble the Loading tray assembled. (See Figure 4)

(2) Remove the two screws ④. Disassemble the Gear bracket assembled. (See Figure 4)

(3) Remove the two screws ⑤, the Tray motor (M103) can be removed. (See Figure 4)

<Assembly notes>

- When the Gear bracket assembled and Riveting bracket-damper assembled are assembled, move the Riveting holder-rack assembled of the Riveting damper-bracket assembled fully in the direction indicated by the arrow. (See Figure 5)
- Mount the Tray motor (M103) so the label position is correct. (See Figure 4)
- Use the correct springs for mounting the drive unit because the springs ② differ in size. (Spring ②-2 is larger than spring ②-1)

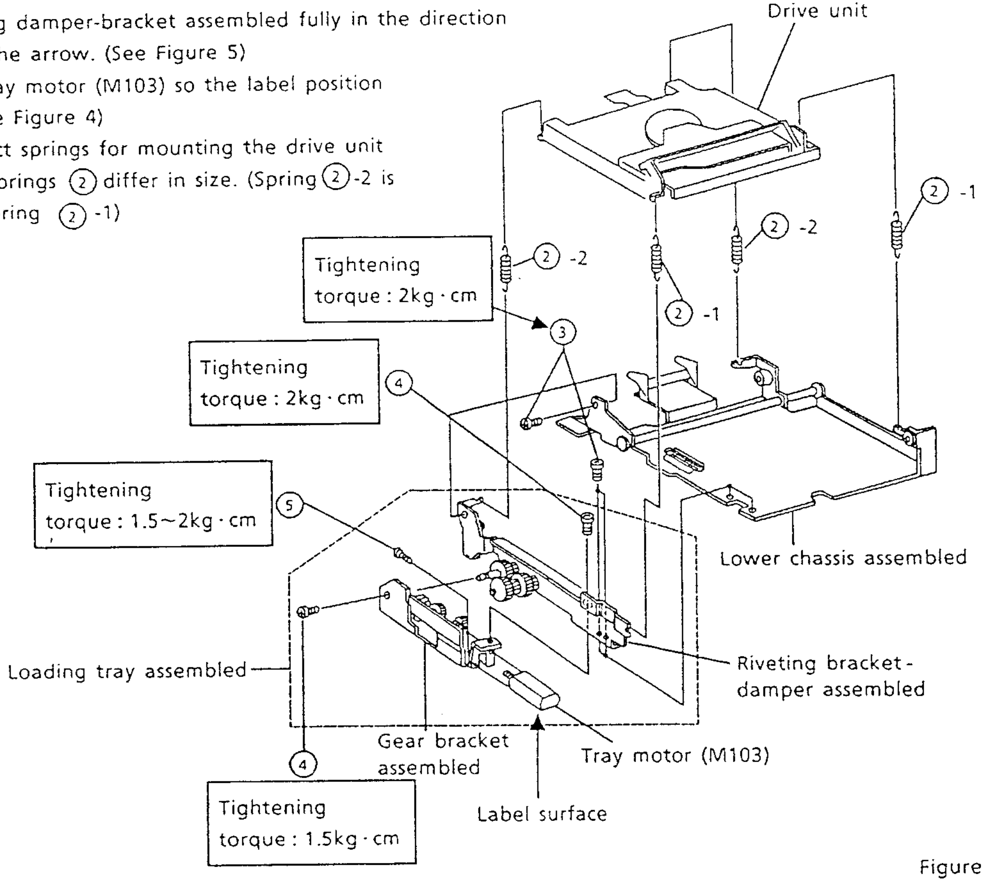

Drive unit
②-1
②-2
②-2
②-1
Tightening torque : 2kg·cm
③
Tightening torque : 2kg·cm
④
Tightening torque : 1.5~2kg·cm
⑤
Lower chassis assembled
Riveting bracket-damper assembled
Loading tray assembled
Gear bracket assembled
Tray motor (M103)
④
Tightening torque : 1.5kg·cm
Label surface

Figure 4

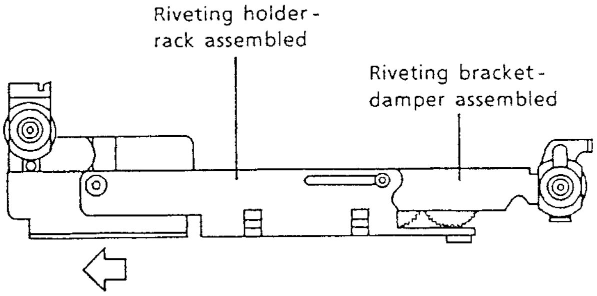

Riveting holder-rack assembled
Riveting bracket-damper assembled

Figure 5

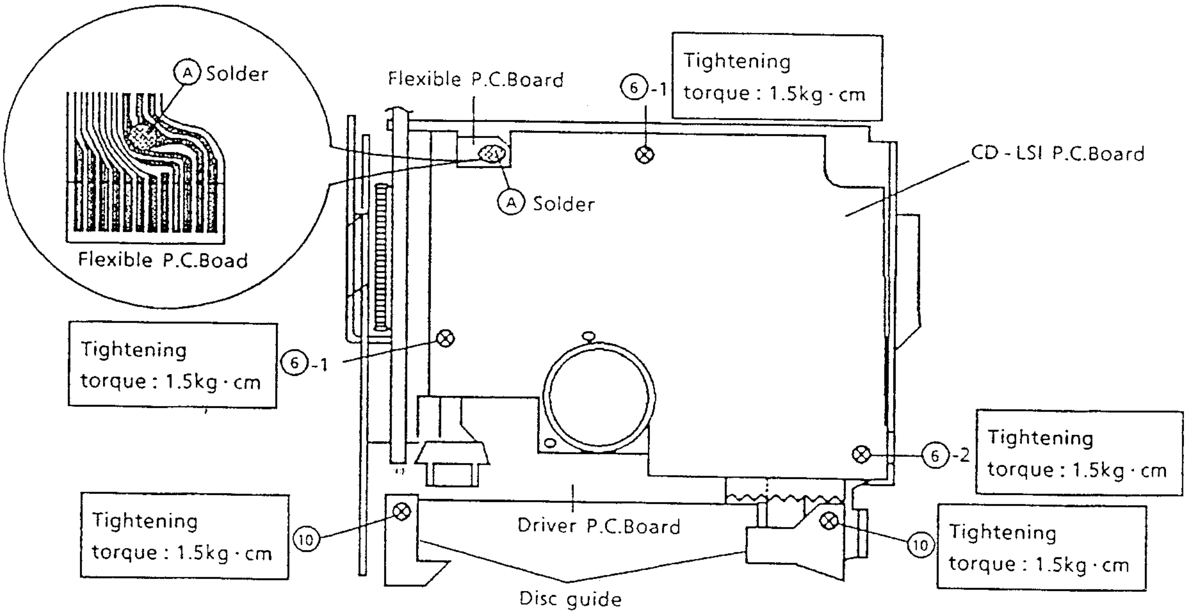
3. CD-LSI P.C.Board disassembly

(1) Before disassembling the CD-LSI P.C.Board, remember to solder point Ⓐ on the Flexible P.C.Board connected to the pick-up unit. (See Figure 6)

(2) Remove the three screws ⑥ and the connectors connected to the CD-LSI P.C.Board. (See Figure 6) The CD-LSI P.C.Board can be removed.

<Assembly notes>

- The screw ⑥-2 type is different from that of the screws ⑥-1.
- The solder on the Flexible P.C.Board must be thoroughly removed after inserting the connector into the CD-LSI P.C.Board connector.



Ⓐ Solder
Flexible P.C.Boad
Flexible P.C.Board
⑥-1
Tightening torque : 1.5kg · cm
CD-LSI P.C.Board
Ⓐ Solder
Tightening torque : 1.5kg · cm
⑥-1
⑥-2
Tightening torque : 1.5kg · cm
Tightening torque : 1.5kg · cm
⑩
Driver P.C.Board
⑩
Tightening torque : 1.5kg · cm
Disc guide

Figure 6

4. Driver P.C.Board disassembly

(1) Remove the two screws ⑩. Remove the two Disc guides. (See Figure 6)

(2) Remove all connectors and wires connected to the driver P.C.Baord, the P.C.Baord can be removed.

5. Sled motor (M102) disassembly

(1) Remove the two screw ⑦ and two wires (blue and red) connected between the Driver P.C.Baord and the Sled motor (M102). (See Figures 7 and 8)

Note : If the sled is pulled too forcibly, the Gear rack will be broken or the Screw shaft will be scratched.

(2) Remove the Bushing, Shaft screws, and the washer ⑧ (M1.7) to disassemble the Middle gears. (See Figure 8)

(3) Remove the two screws ⑨. (See Figure 8) The Sled motor (M102) can be removed.

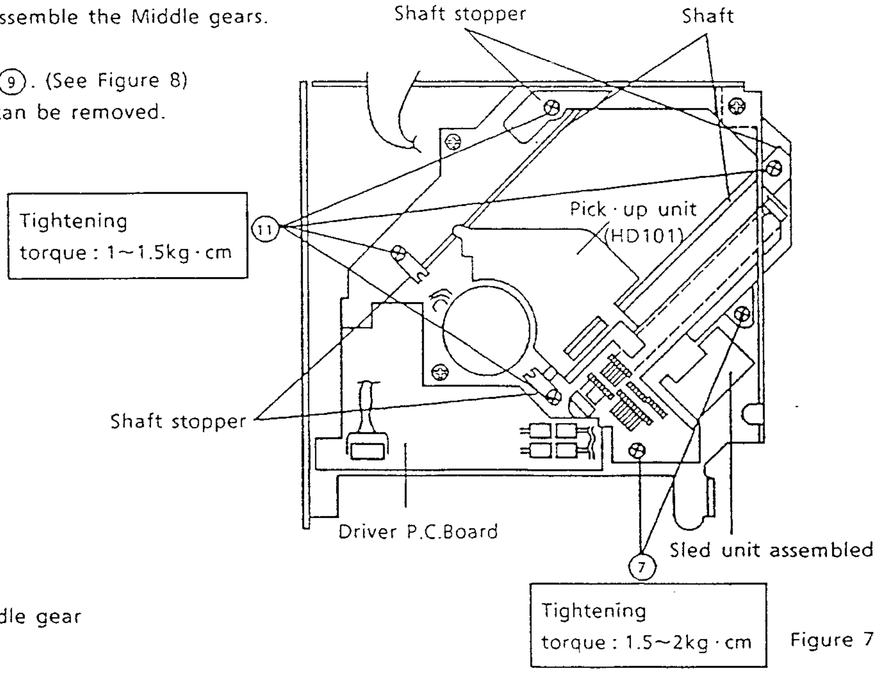

Shaft stopper
Shaft
Tightening torque : 1~1.5kg · cm
⑪
Pick · up unit (HD101)
Shaft stopper
Driver P.C.Board
⑦
Sled unit assembled
Tightening torque : 1.5~2kg · cm

Figure 7

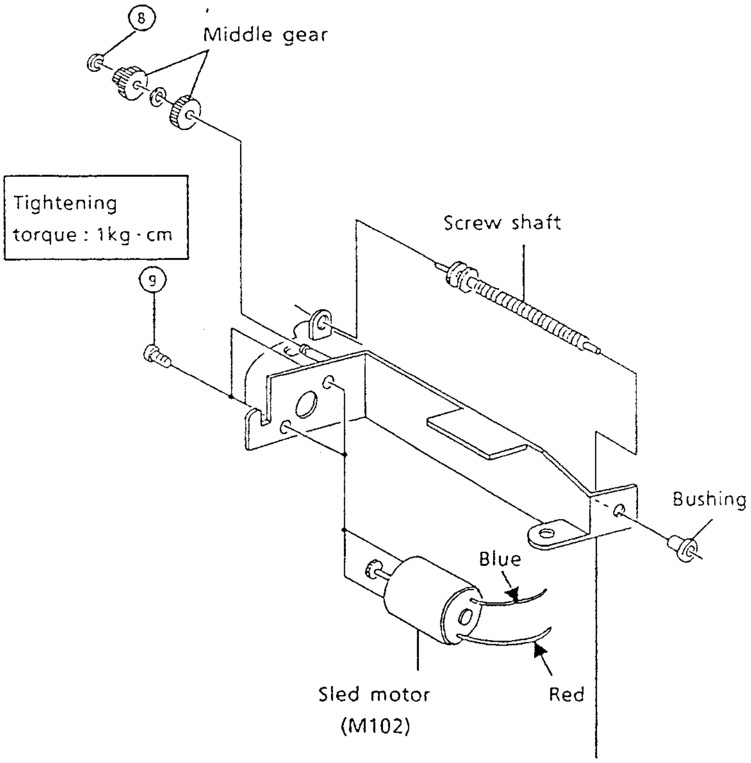
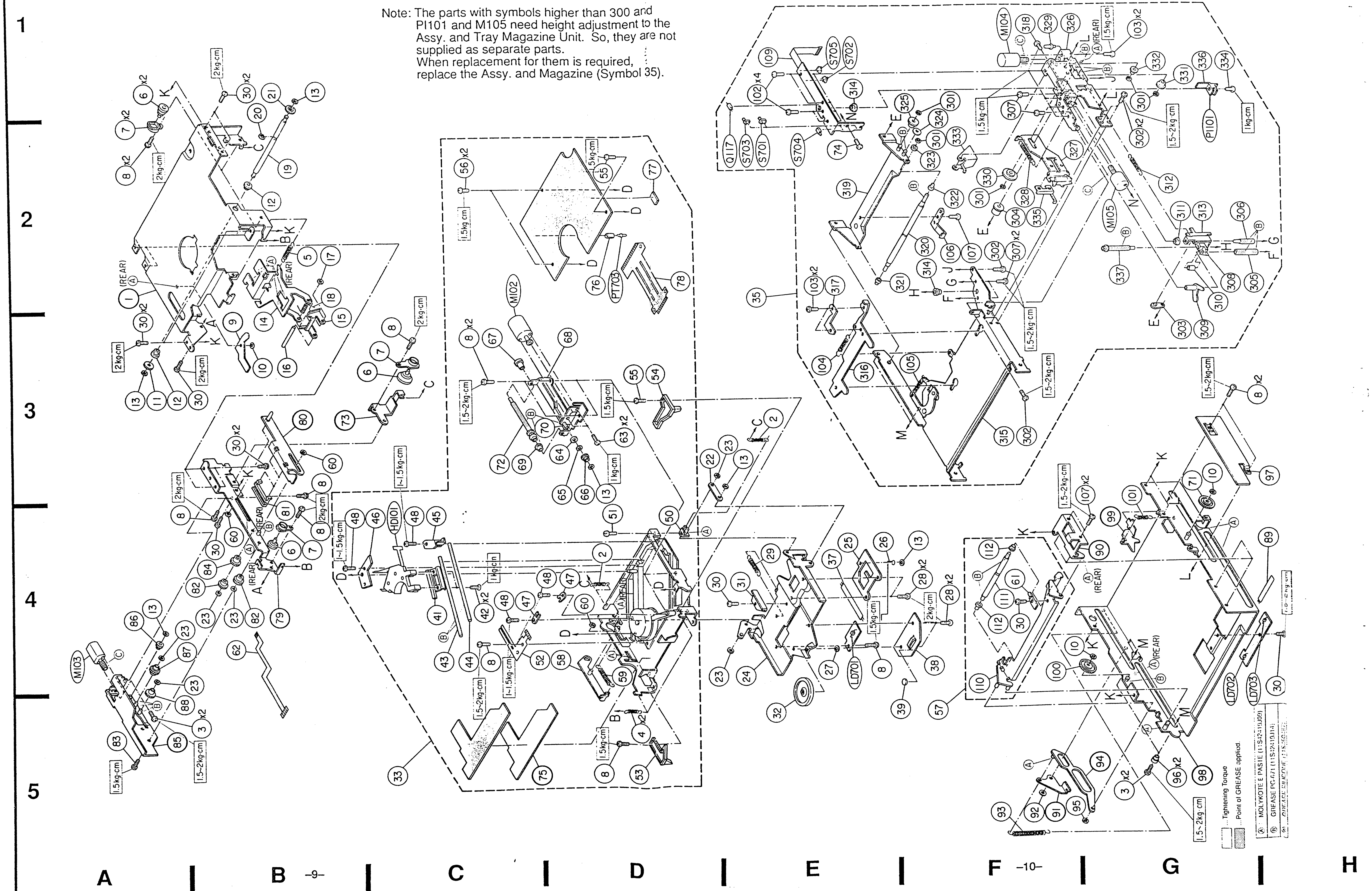

⑧
Middle gear
Tightening torque : 1kg · cm
⑨
Screw shaft
Bushing
Blue
Red
Sled motor (M102)
Motor bracket

Figure 8

Exploded View (CD Mechanism)

Note: The parts with symbols higher than 300 and PI101 and M105 need height adjustment to the Assy. and Tray Magazine Unit. So, they are not supplied as separate parts.
When replacement for them is required, replace the Assy. and Magazine (Symbol 35).


1
2
3
4
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A
B
C
D
E
F
G
H
2kg·cm
1.5kg·cm
1.5~2kg·cm
1~1.5kg·cm
1kg·cm
(REAR)
x2
x4
K
A
B
C
D
E
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G
H
J
L
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1
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M104
M105
HD101
PT703
PI101
Q117
S701
S702
S703
S704
S705
LD701
LD702
LD703

▭ ... Tightening Torque
▨ ... Point of GREASE applied.

Ⓐ MOLYKOTE E PASTE (11S:12:19J09)
Ⓑ GREASE PG-671 (11S:12:19J14)
Ⓐ GREASE SILICONE (11S:[illegible])

6. Pick-up unit (HD101) disassembly

- Wear an electrostatic discharge band when disassembling the Pick-up unit (HD101). Do not touch the lens or base.

(1) Remove the four screws ⑪ and four Shaft stoppers. (See Figure 7)
(2) Remove the two Shafts. (See Figure 7)
(3) Remove the two screws ⑫ and the Gear rack. (See Figure 9)

<Assembly notes>

- Always wear an electrostatic discharge band.
- Never touch the Lens of the Pick-up unit or the base. (See Figure 10)
- The Solder on the Flexible P.C.Baord must be thoroughly removed after inserting the connector into the CD-LSI P.C.Board connector. (See Figure 10)
- Form the two Flexible P.C.Board projecting from the Pick-up unit (HD101) as shown in Figure 11.

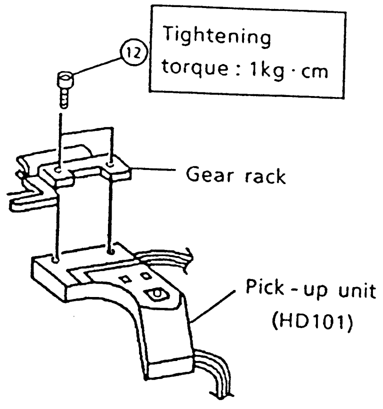
⑫
Tightening torque : 1kg · cm
Gear rack
Pick-up unit (HD101)

Figure 9

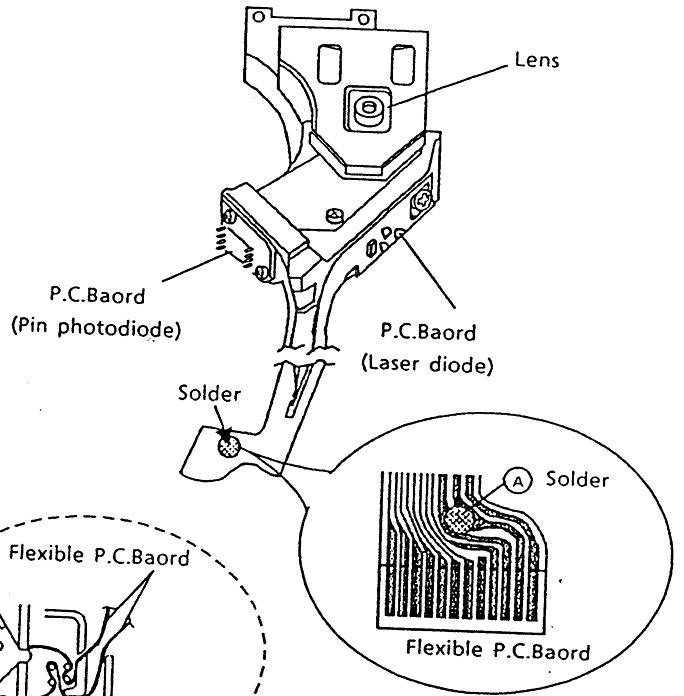
Lens
P.C.Baord (Pin photodiode)
P.C.Baord (Laser diode)
Solder
Ⓐ Solder
Flexible P.C.Baord

Figure 10

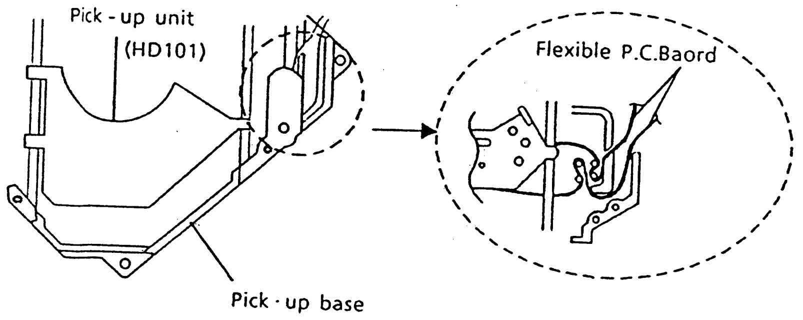
Pick-up unit (HD101)
Flexible P.C.Baord
Pick-up base

Figure 11

7. Lower roller disassembly

(1) Remove the two screws ⑬ and the Riveted roller bracket. (See Figure 12)
(2) Remove the washer ⑭ (M2.6). (See Figure 12)
(3) Straighten the Hook Ⓑ using a pair of pliers. (See Figure 12)
The Lower roller can be removed.

<Assembly note>

- Flatten the Hook Ⓑ with a pair of pliers as shown in Figure 13.

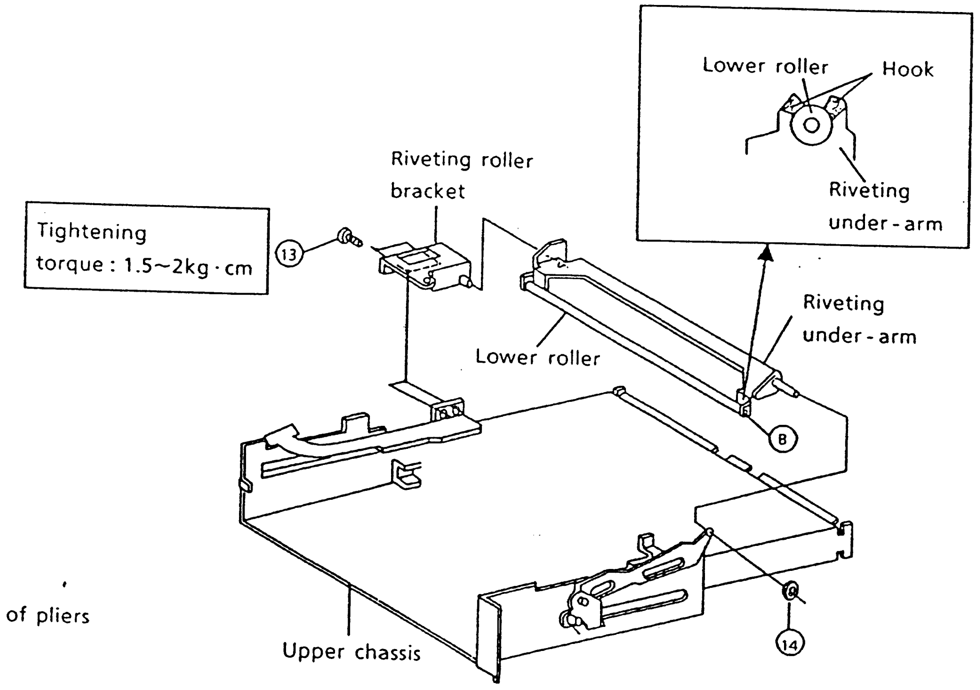
Lower roller
Hook
Riveting under-arm
Riveting roller bracket
Tightening torque : 1.5~2kg · cm
⑬
Lower roller
Riveting under-arm
Ⓑ
Upper chassis
⑭

Figure 12

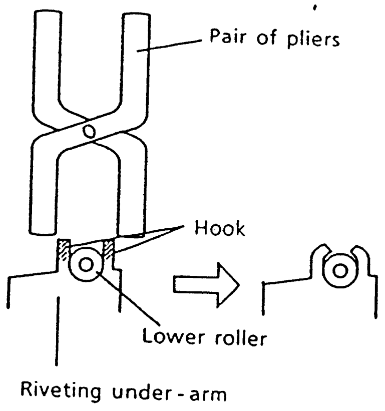
Pair of pliers
Hook
Lower roller
Riveting under-arm

Figure 13

Cabinet Assembly Parts List (CD Mechanism)

Note : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
2		41B31986W10	Spring, Coil
3		03S94385F09	Screw, Pan (M2×3)
4	5-D	41B31986W09	Spring, Coil
5	2-B	41B31986W07	Spring, Coil
6		75B38085W01	Damper, SDL
7		15A40136W01	Holder, Damper-S
8		03S40014G07	Screw, W/Washer (M2×4)
10		04B41345P22	Washer, Lock (M2.6)
11	3-A	44A31669W01	Gear, Timing
12		43A31617W01	Sleeve, Shaft Timing
13		04B41345P02	Washer, Lock (M1.7)
14	2-B	07C31699W01	Bracket, Locator
15	3-B	01A32057W01	Assy., Riv Disc Guide
16	3-B	47A31658W01	Shaft, Arm
17	2-B	04B41345P01	Washer, Lock (M1.2)
18	2-B	41A32137W01	Spring, Disc Guide
19	2-B	47A31654W01	Shaft, Timing
20	1-B	04C42091G11	Ring "E" (M2.5)
21	1-B	44A31669W01	Gear, Timing
22	3-D	45A31566W01	Link, Clamper
23		04B41345P04	Washer, Lock (M2.6)
24	4-E	01C32060W01	Assy., Riv. Clamper
25	4-E	01A31985W01	Assy., Riv. Spring
26	4-E	47A32014W01	Rod, Lifter
27	4-E	04B41345P06	Washer, Lock (M2.1)
28	4-F	03S94385F06	Screw, Pan (M2×1.8)
29	4-E	41B31986W02	Spring, Coil
30		03S94385F19	Screw, Pan (M2×2.5)
31	4-E	15A11267W01	Holder, Disc
32	5-E	01V41100W41	Assy., Clamper B
33	5-C	01V41100W92	Assy., Drive Unit (Included Spindle Motor (M101))
35	2-E	01V41100W36	Assy., Tray Magazine Unit
37	4-E	30T73687F21	Wire, Parallel 2P
38	4-F	07A31556W01	Bracket, Top
39	5-F	43A41006F06	Spacer, Polyslider
41	4-C	44A31717W01	Rack, Gear
42	4-C	03S94385F21	Screw, Countersink (M1.7×3)
43	4-C	47A31708W01	Shaft, Pickup
44	4-C	47A31708W02	Shaft, Pickup
45	4-C	07A31719W01	Stopper, Shaft (B)
46	4-C	07A31720W01	Stopper, Shaft (C)
47		07A31721W01	Stopper, Shaft (D)
48		03S70494F14	Screw, Pan (M1.7×4)
50	4-D	01A32068W01	Assy., Riv. Bracket Damper
51	4-D	03S40014G61	Screw, W/Washer (M2×5)
52	4-C	07A41531W01	Spring, GND
53	5-D	15A31680W01	Guide, Disc R
54	3-D	15A31681W01	Guide, Disc L
55		03S94385F18	Screw, Pan (M2×3.5)
56	2-C	03S70494F15	Screw, Pan (M2×4)
57	5-F	01V41100W32	Assy., Bracket Roll Under
58	4-D	01B31975W01	Assy., Riv. Clamper C
59	4-D	41B31986W03	Spring, Coil
60		04B41345P19	Washer, Lock (M1.7)
61	4-F	41A41640W01	Spring, Roller
62	4-B	84D31161W01	FPC Tray Motor P.C.Board
63	3-D	03S94385F30	Screw, Pan (M1.6×2.8)
64	3-D	44A32062W01	Gear, Middle (A)
65	3-D	04S40075G05	Washer, Polyslider (M2.1)
66	3-D	44A32063W01	Gear, Middle (B)
67	3-C	43A40068W01	Bushing, Screw
68	3-D	07B31714W01	Bracket, Motor
69	3-C	43A40144W01	Bushing, Stopper
70	3-C	46A32065W01	Stud, Middle
71	3-G	44A31670W01	Gear, Idler
72	3-C	01V41200W25	Assy., Shaft Screw
74	2-E	03S70494F18	Screw, Pan (M1.7×2)
76	2-D	43A40834W01	Base, Photo
77	2-D	14S71058F40	Insulator, Cover
78	2-D	84B32020W01	FPC CD-LSI P.C.Board
81	4-B	44A31662W01	Rack
82	4-B	44A31672W01	Gear, Drive
83	5-A	03S94385F02	Screw, Pan (M1.7×3)
84	4-B	44A40752W01	Gear, Drive B
86	4-A	44A31666W01	Worm, Wheel Tray
87	4-A	44A31668W01	Gear, Drive A
88	5-A	44A31672W01	Gear, Drive
89	4-H	30T73687F22	Wire, Parallel 3P
92	5-F	04B41345P05	Washer, Lock (M3.5)
93	5-F	41B31986W06	Spring, Coil
95	5-F	04B41345P04	Washer, Lock (M2.6)
96	5-G	43A31619W01	Sleeve
97	3-H	44A31661W01	Rack, Tray
100	4-F	44A31670W01	Gear, Idler
101	3-G	41B31986W04	Spring, Coil

Symbol No.	Index	Part No.	Description
102	2-E	03S94385F08	Screw, Pan (M2×3)
103		03S94385F28	Screw, Pan (M1.7×2)
104	3-E	41B31986W05	Spring, Coil
105	3-F	41B31986W02	Spring, Coil
106	2-F	41A40795W01	Spring, Stopper
107		03S94385F07	Screw, Pan (M2×2)
109	1-E	84T45565W01	FPC Motor & Sensor P.C.Board
110	4-F	01B31982W01	Assy., Riv. Arm R Under
111	4-F	01A41424W01	Assy., Shaft R Under
112	4-F	43A31615W01	Sleeve, Shaft Roll

Symbol No.	Part No.	Description
	Miscellaneous	
HD101	88T35580W01	Pickup, Unit
LD701	48T16057W02	LED, AN501 (RED)
LD702	48T16057W01	LED, AN501 (RED)
LD703	48T16057W01	LED, AN501 (RED)
M102	01V41200W24	Assy., Sled Motor (3.5V-200mA)
M103	01V14400W40	Assy., Tray Motor (6V-260mA)
M104	01V41100W38	Assy., Loading Motor (7V-260mA)
PT703	48T35506W01	Transistor, Photo PS3062
Q117	48T63420F04	Transistor, Chip 2SA1037K
S701	40T15222W01	Switch, Detector (LOADING)
S702	40T15222W01	Switch, Detector (HMP)
S703	40T25956W01	Switch, Detector (MAGAZINE)
S704	40T35543W02	Switch, Detector (TRAY OUT)
S705	40T15222W01	Switch, Detector (TRAY IN)

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